

# PATENT SPECIFICATION

(11) 1 391 060

1 391 060

(21) Application No. 38442/71 (22) Filed 17 Aug. 1971

(23) Complete Specification filed 15 Aug. 1972

(44) Complete Specification published 16 April 1975

(51) INT CL<sup>2</sup> G07F 17/34

(52) Ind x at acceptance

G4T 2F4 2G 2J 2L 2M

A6H 4A2

G4V H8 P9

(72) Inventor ERNEST PATRICK



## (54) GAMING MACHINES

(71) We, BELL-FRUIT MANUFACTURING COMPANY LIMITED, a British Company of Leen Gate, Lenton, Nottingham, NG7 2ND, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to gaming machines.

Gaming machines of many different kinds are well known. These machines are usually installed in special amusement centres, such as in amusement arcades, or are installed in private or public places where social gatherings occur, such as in clubs or public houses.

15 An object of the present invention is to provide gaming machines for use in self-service stores or super-markets so that customers who have made purchases are offered, free of charge, the chance of winning a prize, preferably in the form of a discount, by playing a game on a machine. The customers are thereby given the chance of winning a prize which will serve as an incentive for them to patronise the store.

20 The present invention consists in a gaming machine on which a player can play a game that results in a win or a lose and which is adapted so that a player can insert a ticket into the machine prior to a game and a record of whether that game results in a win or a lose is made on the ticket. The ticket will preferably be the sales ticket which customers are issued with from a cash register in a store, and an indication of a win recorded on the ticket as a result of a game on the machine entitles the customer/player to a prize.

25 Preferably, the gaming machine includes sensing means, such as photo-electric means, which senses the insertion of the ticket and automatically initiates the game on the machine.

30 The insertion of the ticket may be all that is necessary to initiate a game on the

machine. Alternatively, the machine may be connected to a cash register so that operation of the latter in totalling a customer's purchases automatically presets the gaming machine ready for initiation of a game thereon by the customer's subsequent insertion of a ticket.

The invention will now be described by way of example with reference to the accompanying drawings, in which:—

Figure 1 is a schematic diagram of one embodiment of the invention comprising a gaming machine alone, and

Figure 2 is a schematic diagram of an embodiment of the invention comprising a cash register and gaming machine connected together.

35 The amusement machine shown in Figure 1 is a gaming machine of the kind commonly known as a fruit machine comprising random selector means 1 which operates during each game to present a random selection of symbols in a row in a window 2, and win decoder means 3 which determines whether or not the selection of symbols presented in the window 2 is or is not a prize winning combination and produces corresponding output signals. The random selector means 1 conventionally comprises a plurality of co-axial reels which carry symbols around their periphery and which are spun together and stopped one after another at random intervals so that each displays a symbol in the window 2. The win decoder means 3 conventionally comprises a series of electro-magnet circuits each of which includes one of a circle of fixed studs associated with each reel and a wiper contact fast with each reel and which co-operates with the respective circle of studs. For each prize winning combination the reels take-up positions such that the wipers complete a series circuit through a corresponding one of the electro-magnetic circuits and a relay in that circuit produces an output signal.

40 In known fruit machines the output signals from the win decoder means 3

operated either a credit unit which allows further free games on the machine, or payout means which pays out a prize in coins or tokens. In the machine illustrated in Figure 1, however, the output signals from the win decoder means 3 control printing means 4 so that the latter prints out characters representative of the win on a ticket inserted into the machine through a slot 5. It is intended that this ticket will be the sales ticket issued by a cash register near which the fruit machine is situated in a store. Each customer will then be able to take his ticket, insert it into the slot 5 and play a game on the machine. A win will result in a corresponding win character being printed onto the ticket and it is intended that this will entitle the customer to a prize in the form of a cash discount, or the equivalent value of goods from the store, or some other advantage, when the ticket is presented to the cash register operative.

The printing means 4 may be adapted to print different characters corresponding to different valued wins which can arise. Most conveniently these characters are simply percentage discounts or cash figures. The printing means is also adapted to print an indication of a lose on the ticket when no win occurs so that the ticket is in effect cancelled and the customer/player is prevented from claiming the benefit of a win occurring during subsequent games which he might play on the machine using the same ticket.

Operation of the first machine may be independent of the insertion of a ticket into the slot 5 by a customer/player, conventional means such as an operating lever or button being provided to initiate a game. Preferably, however, the fruit machine is adapted so that insertion of the ticket initiates a game. This is achieved by providing ticket sensing means 6, such as a photo-electric cell, to sense the insertion of a ticket and to initiate operation of the random selector means 1. In particular the ticket sensing means 6 may initiate operation of a programmer unit which in turn controls the operating sequence of the random selector means 1, the win decoder means 3 and the printing means 4. In an alternative arrangement the tickets may have special identifying marks applied to them by the cash register and the ticket sensing means 6 may be adapted to sense these marks. For example, the cash register might print magnetic ink markings on the ticket which are identified by magnetic sensing means 6.

The arrangement illustrated in Figure 2 comprises a cash register 15 and fruit machine 16. The cash register 15 comprises a bank of buttons 9 which are operated to register and print onto a sales ticket the

prices of individual purchases, and a totalling button 17 which is operated to total the prices registered and to cause the total to be printed onto the sales ticket. The fruit machine 16 comprises random selector means 18 and win decoder means 22 similar to that of the fruit machine illustrated in Figure 1. In this fruit machine, however, playing of a game is controlled by the cash register 15 through an electrical connection 19 between the totalling button 17 of the cash register and the random selector means 18. By these means the operation of totalling each customer's bill automatically presets the fruit machine so that the customer can then play a game on it. This the customer does by inserting his sales ticket into a slot 20 in the fruit machine, ticket sensing means 21 sensing the ticket and initiating the game as in the fruit machine of Figure 1. Win decoder means 22 operates print means 23 so that the latter prints out an indication of the resulting win or lose on the ticket, again as in the fruit machine of Figure 1. The connection 19 may in fact be connected to a programmer unit in the fruit machine which in turn controls operation of the random selector means 18 and win decoder means 22.

It will be appreciated that although the invention has been described above as applied to fruit machines, the invention can equally well be applied to other types of gaming machine or even amusement machines which allow a player to play a game of skill and award prizes accordingly.

#### WHAT WE CLAIM IS:—

1. A gaming machine on which a player can play a game that results in a win or a lose and which is adapted so that a player can insert a ticket into the machine prior to a game and a record of whether that game results in a win or a lose is made on the ticket.
2. A machine as claimed in claim 1 which is adapted so that insertion of said ticket into the machine allows the player to play a game.
3. A machine as claimed in claim 1 which is adapted so that insertion of said ticket into the machine initiates a game.
4. A machine as claimed in claim 1 in combination with a cash register adapted to register and print out the total of a number of prices of purchases, the gaming machine being connected to the cash register so as to allow a game to be played on the machine each time a total is printed out by the register.
5. A combination as claimed in claim 4 in which operation of a totalling button of the cash register allows a player to play a game on the machine.
6. A combination as claimed in claims 4 and 5 in which the machine is adapted so

that insertion of said ticket into the machine initiates a game.

7. A combination as claimed in claim 6 in which the cash register is adapted to issue specially marked sales tickets, and in which the machine is adapted to identify these tickets and initiate a game each time one is inserted.

8. A machine as claimed in any one of the preceding claims in which photo-electric means senses the insertion of said ticket and controls playing of the machine.

9. A machine as claimed in any one of the preceding claims which records said win or lose on said ticket by printing corresponding characters thereon.

10. A gaming machine substantially as herein described with reference to Figure 1 of the accompanying drawings.

11. A gaming machine in combination with a cash register substantially as herein described with reference to Figure 2 of the accompanying drawings.

BARKER, BRETTELL & DUNCAN,  
Chartered Patent Agents,  
Agents for the Applicant,  
138, Hagley Road,  
Edgbaston,  
Birmingham, B16 9PW.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1975.  
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from  
which copies may be obtained.

1391060

COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of the Original on a reduced scale*

FIG. 1.

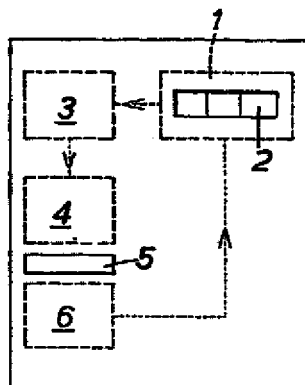
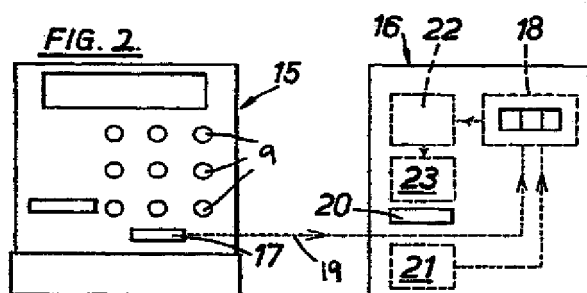


FIG. 2.



19 BUNDESREPUBLIK  
DEUTSCHLAND



DEUTSCHES  
PATENTAMT

12 Offenlegungsschrift  
10 DE 40 09 980 A 1

51 Int. Cl. 5:  
G 07 G 1/12  
G 07 G 5/00  
G 07 C 15/00

21 Aktenzeichen: P 40 09 980.6  
22 Anmeldetag: 28. 3. 90  
23 Offenlegungstag: 2. 10. 91

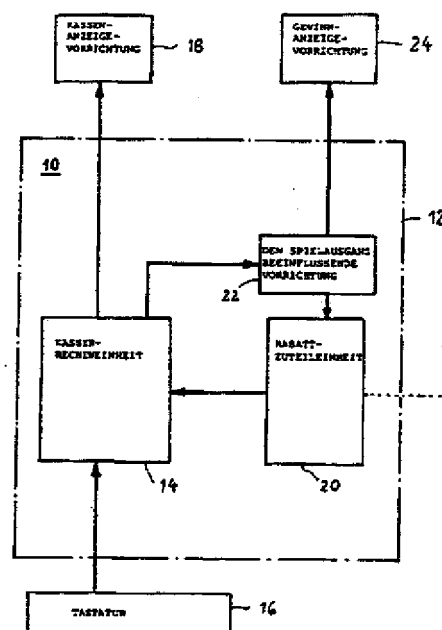
DE 4009980 A 1

71 Anmelder:  
Büchele, Horst, 8220 Traunstein, DE  
74 Vertreter:  
Menges, R., Dipl.-Ing., Pat.-Anw., 8000 München

72 Erfinder:  
gleich Anmelder

54 Registrierkasse

57 Beschrieben ist eine Kombination aus einer üblichen Registrierkasse und einem Spielautomaten. Der Spielvorgang wird durch eine Kassenrecheneinheit (24) ausgelöst. Wie bei einem Spielautomaten ist eine Gewinnanzeigevorrichtung (24) vorgesehen, über die sich der Ablauf des Spielvorganges verfolgen läßt. Bei einem Gewinn wird mittels einer Rabattzuteileinheit (20) über die Kassenrecheneinheit (14) der Registrierkasse (10) ein Rabatt gewährt, der auf der Kassenanzeigevorrichtung (18) ablesbar ist.



DE 4009980 A 1

## Beschreibung

Die Erfindung betrifft eine Registrierkasse der im Oberbegriff des Anspruchs 1 angegebenen Art.

Bei einer solchen bekannten Registrierkasse (DE-OS 33 09 633) ist zusätzlich zu den bei einer Registrierkasse üblichen Einheiten wie Tastatur, Kassenrecheneinheit und Kassenanzeigevorrichtung eine Rabattzuteileinheit in Form eines Systems zur Zufallsverteilung von Diskontsätzen, genauer gesagt, von Rabattsätzen vorgesehen. In der Kasse ist eine Anzahl von Rabattsätzen gespeichert, die von Null bis zu einem bestimmten Höchstsatz gehen können. Für den Vorgang des Zuteilens eines Rabattsatzes ist der Eingriff des Kunden selbst erforderlich, der ein Betätigungsmittel in Form eines Tasters od. dgl. betätigen muß. Nach einem Zufallsprinzip wird dann irgendein Rabattsatz ausgewählt und bei der Abrechnung für diesen Kunden berücksichtigt. Die Betätigung des Betätigungsmittels durch den Kunden löst innerhalb der Registrierkasse einen Maschinenzyklus aus, der für den Kunden nicht sichtbar ist. Erst auf dem Verkaufsbeleg kann der Kunde feststellen, ob und welchen Rabattsatz er erhalten hat. Es kann zwar eine Lampe oder eine akustische Anzeige vorgesehen sein, um dem Kunden anzuzeigen, ob der ihm zugeteilte Rabattsatz gleich oder größer als ein bestimmter Basissatz ist, grundsätzlich zeigt das dem Kunden jedoch nur das Ergebnis des Zuteilvorganges an, nicht jedoch den Zuteilvorgang selbst. Nachteilig ist weiter, daß nur durch manuelle Betätigung des Betätigungsmittels der Zuteilvorgang überhaupt ausgelöst wird.

Aufgabe der Erfindung ist es, eine Registrierkasse der im Oberbegriff des Anspruchs 1 angegebenen Art so zu verbessern, daß der Rabattzuteilvorgang ausgelöst wird, ohne daß dazu der Kunde ein Betätigungsmittel handhaben muß, und daß der Ablauf des Zuteilvorganges für den Kunden sichtbar angezeigt wird.

Diese Aufgabe ist erfindungsgemäß durch die im kennzeichnenden Teil des Anspruchs 1 angegebenen Merkmale gelöst.

Bei der Registrierkasse nach der Erfindung ist das bei der bekannten Registrierkasse erforderliche manuelle Betätigungsmittel durch eine den Spielausgang beeinflussende Vorrichtung eines Spielautomaten ersetzt worden, also durch das elektronische Gewinnrechenwerk od. dgl. eines Spielautomaten. Der Eingang dieser den Spielausgang beeinflussenden Vorrichtung ist mit einem Ausgang der Kassenrecheneinheit verbunden, d. h. die Kassenrecheneinheit selbst setzt, nachdem sie ihrerseits durch die übliche Tastatur in Gang gesetzt worden ist, die den Spielausgang beeinflussende Vorrichtung in Gang. Diese ist ihrerseits mit einer Gewinnanzeigevorrichtung verbunden, wie sie bei einem Spielautomaten üblicherweise vorhanden ist, also z. B. drei nebeneinander angeordneten, umlaufenden Walzen, die Zahlen, Früchte oder andere Symbole tragen und durch die den Spielausgang beeinflussende Vorrichtung in Gang gesetzt und gestoppt werden. Gleichzeitig mit dem Stoppen der Gewinnanzeigevorrichtung steuert die den Spielausgang beeinflussende Vorrichtung die Rabattzuteileinheit an, indem sie dieser signalisiert, ob ein Gewinn erzielt worden ist oder nicht, also ein Rabatt zu gewähren ist oder nicht. Die Rabattzuteileinheit wirkt entsprechend auf die Kassenrecheneinheit ein, die dann wie bei der bekannten Registrierkasse bei dem Abrechnungsvorgang den Rabattsatz berücksichtigt. Bei der Registrierkasse nach der Erfindung wird also der Rabattzuteilvorgang durch den Kassenvorgang selbst

ausgelöst, ohne daß ein Betätigungsmittel durch den Kunden zu handhaben ist, und der weitere Vorgang, der neben dem eigentlichen Kassenvorgang abläuft, entspricht dem Vorgang, wie er in einem Spielautomaten abläuft und dort durch bloßen Geldeinwurf ausgelöst wird. Am Ende dieses Vorganges ist gegenüber dem Spielautomaten unterschiedlich, daß ein Gewinn als ein Rabattsatz auf die zu zahlende Kaufsumme gewährt wird. Die Registrierkasse nach der Erfindung stellt somit, verallgemeinernd ausgedrückt, eine Kombination aus einer üblichen Registrierkasse und einem Geldspielautomaten dar.

Vorteilhafte Ausgestaltungen der Erfindung bilden die Gegenstände der Unteransprüche.

Ausführungsbeispiele der Erfindung werden im folgenden unter Bezugnahme auf die Zeichnungen näher beschrieben. Es zeigt:

Fig. 1 eine erste Ausführungsform der Registrierkasse nach der Erfindung,

Fig. 2 eine zweite Ausführungsform der Registrierkasse nach der Erfindung,

Fig. 3 eine dritte Ausführungsform der Registrierkasse nach der Erfindung, und

Fig. 4 ein Blockschaltbild der Registrierkasse nach der Erfindung.

Die Fig. 1 bis 3 zeigen in perspektivischer Darstellung drei verschiedene Ausführungsformen einer insgesamt mit 10 bezeichneten Registrierkasse. Fig. 4, auf die zunächst Bezug genommen wird, zeigt ein Blockschaltbild der Registrierkasse 10. Die Registrierkasse 10 hat ein strichpunktiert angedeutetes Gehäuse 12, in welchem eine Kassenrecheneinheit 14 untergebracht ist. Diese wird durch eine an oder neben dem Gehäuse 12 vorgesehene Tastatur 16 betätigt und steuert eine Kassenanzeigevorrichtung 18, deren Eingang zu diesem Zweck mit einem Ausgang der Kassenrecheneinheit verbunden ist. Weiter ist in dem Gehäuse 12 eine Rabattzuteileinheit 20 untergebracht. Die Rabattzuteileinheit 20 der eingangs beschriebenen bekannten Registrierkasse wird durch ein hier rechts von der Rabattzuteileinheit 20 gestrichelt angedeutetes Betätigungsmittel in Gang gesetzt. Dieses Betätigungsmittel ist bei der Registrierkasse 10 nach der Erfindung durch eine den Spielausgang beeinflussende Vorrichtung 22 eines Spielautomaten ersetzt. Ein weiterer Ausgang der Kassenrecheneinheit 14 ist mit einem Eingang der den Spielausgang beeinflussenden Vorrichtung 22 verbunden, um diese bei einem Abrechnungsvorgang, zum Beispiel dem Drücken der Saldotaste der Tastatur 16, in Gang zu setzen. In der den Spielausgang beeinflussenden Vorrichtung 22 läuft derselbe Vorgang wie in einem Spielautomaten ab. Ein Ausgang der Vorrichtung 22 setzt eine Gewinnanzeigevorrichtung 24 in Gang. Die Gewinnanzeigevorrichtung 24 kann ebenfalls die bei einem Spielautomaten übliche Gewinnanzeigevorrichtung sein, also zum Beispiel aus drei nebeneinander angeordneten, drehbaren Walzen bestehen, wie in den Ausführungsbeispielen nach den Fig. 1 und 2, aus einem Gewinnanzeigefeld, wie bei der Ausführungsform nach Fig. 3, usw. Den Ablauf des Vorgangs in der Vorrichtung 22 kann der Kunde an der Gewinnanzeigevorrichtung 24 mitverfolgen. Wenn die Vorrichtung 22 die Gewinnanzeigevorrichtung 24 stoppt, gibt sie gleichzeitig über einen Ausgang ein entsprechendes Signal an die Rabattzuteileinheit 20 ab, deren Ausgang wie bei der bekannten Registrierkasse mit einem weiteren Eingang der Kassenrecheneinheit 14 verbunden ist. Wenn die Gewinnanzeigevorrichtung 24 einen Gewinn angezeigt hat, berücksichtigt die Kas-

senrecheneinheit 14 bei dem Abrechnungsvorgang einen entsprechenden Rabattsatz.

Bei dem Ausführungsbeispiel nach Fig. 1 ist die Gewinnanzeigevorrichtung 24 wie dargestellt in das Kassengehäuse 12 integriert. Das Anzeigefeld befindet sich auf der Kundenseite der Registrierkasse 10.

In der Ausführungsform nach Fig. 2 ist die Gewinnanzeigevorrichtung 24 als allseitig beweglicher Kassengehäuseaufsatz ausgebildet.

Bei dem Ausführungsbeispiel nach Fig. 3 ist die Gewinnanzeigevorrichtung 24 als drehbarer Kassengehäuseaufsatz ausgebildet.

Die vorstehend beschriebene Registrierkasse 10 stellt somit eine Kombination aus einer üblichen Registrierkasse und einem Spielautomaten dar, bei der der Spielvorgang ohne manuellen Eingriff durch den Kunden automatisch durch den Kassenvorgang ausgelöst wird. Der gewährte Rabatt ersetzt den bei einem Spielautomaten ausbezahlten Gewinn und somit die sonst üblichen Rabattmarken od. dgl., allerdings mit dem zusätzlichen Spielanreiz für den Kunden.

#### Patentansprüche

1. Registrierkasse mit einer Kassenanzeigevorrichtung (18), mit einer Kassenrecheneinheit (14) mit daran angeschlossener Rabattzuteileinheit (20) und mit einem Betätigungsmittel (22) für die Rabattzuteileinheit (20), dadurch gekennzeichnet, daß das Betätigungsmittel für die Rabattzuteileinheit (20) aus einer den Spielausgang beeinflussenden Vorrichtung (22) eines Spielautomaten besteht, die einerseits mit der Kassenrecheneinheit (14) verbunden und durch diese in Gang setzbar ist und andererseits mit einer neben der Kassenanzeigevorrichtung (18) vorgesehenen Gewinnanzeigevorrichtung (24) eines Spielautomaten verbunden ist.
2. Registrierkasse nach Anspruch 1, dadurch gekennzeichnet, daß die Gewinnanzeigevorrichtung (24) in das Kassengehäuse (12) integriert ist.
3. Registrierkasse nach Anspruch 1, dadurch gekennzeichnet, daß die Gewinnanzeigevorrichtung (24) als drehbarer Kassengehäuseaufsatz ausgebildet ist.
4. Registrierkasse nach Anspruch 1 oder 3, dadurch gekennzeichnet, daß die Gewinnanzeigevorrichtung (24) als allseitig beweglicher Kassengehäuseaufsatz ausgebildet ist.

Hierzu 3 Seite(n) Zeichnungen

50

55

60

65

Fig. 1

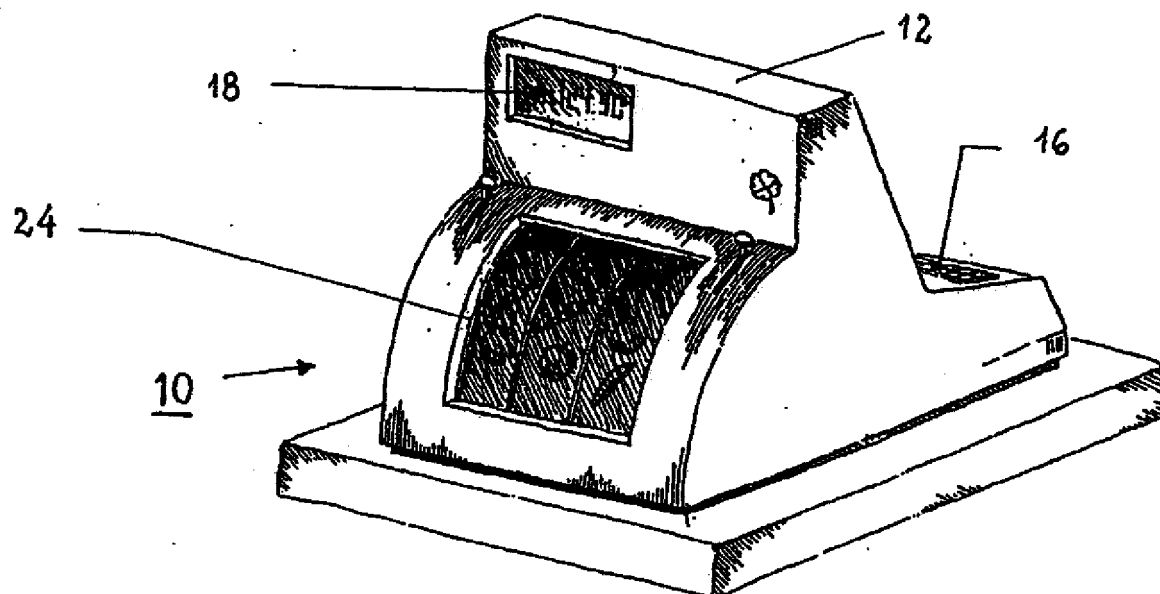


Fig. 2

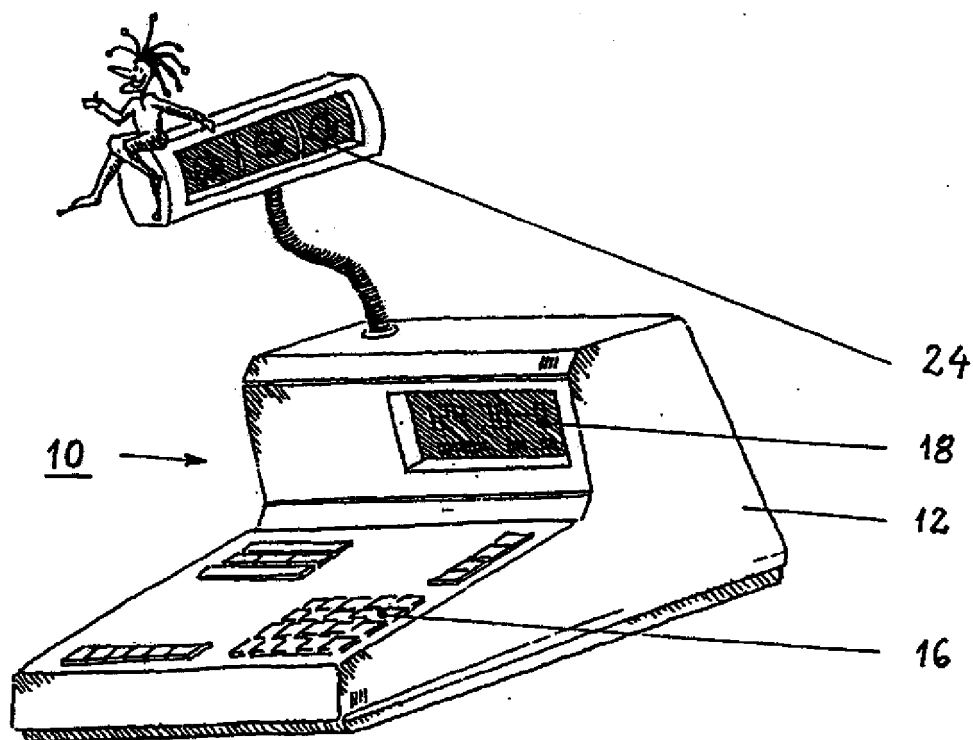




Fig. 3

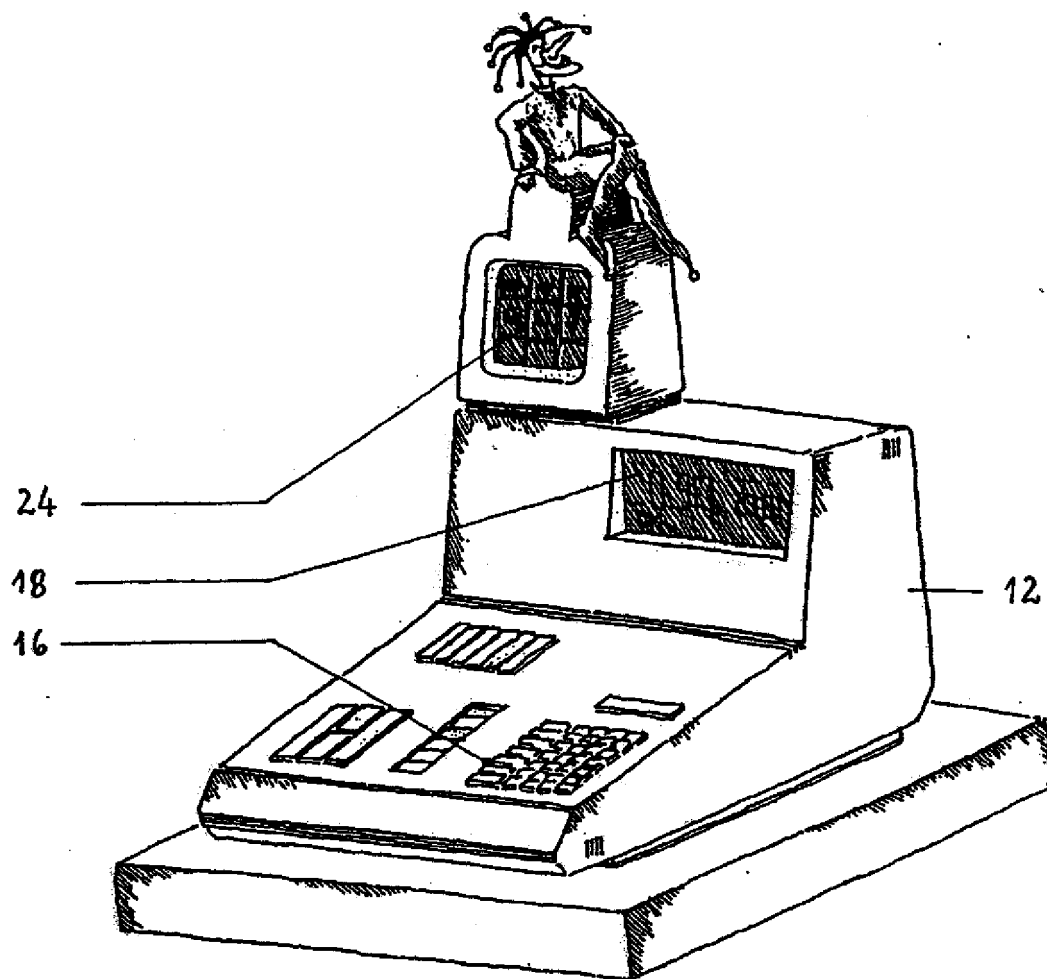
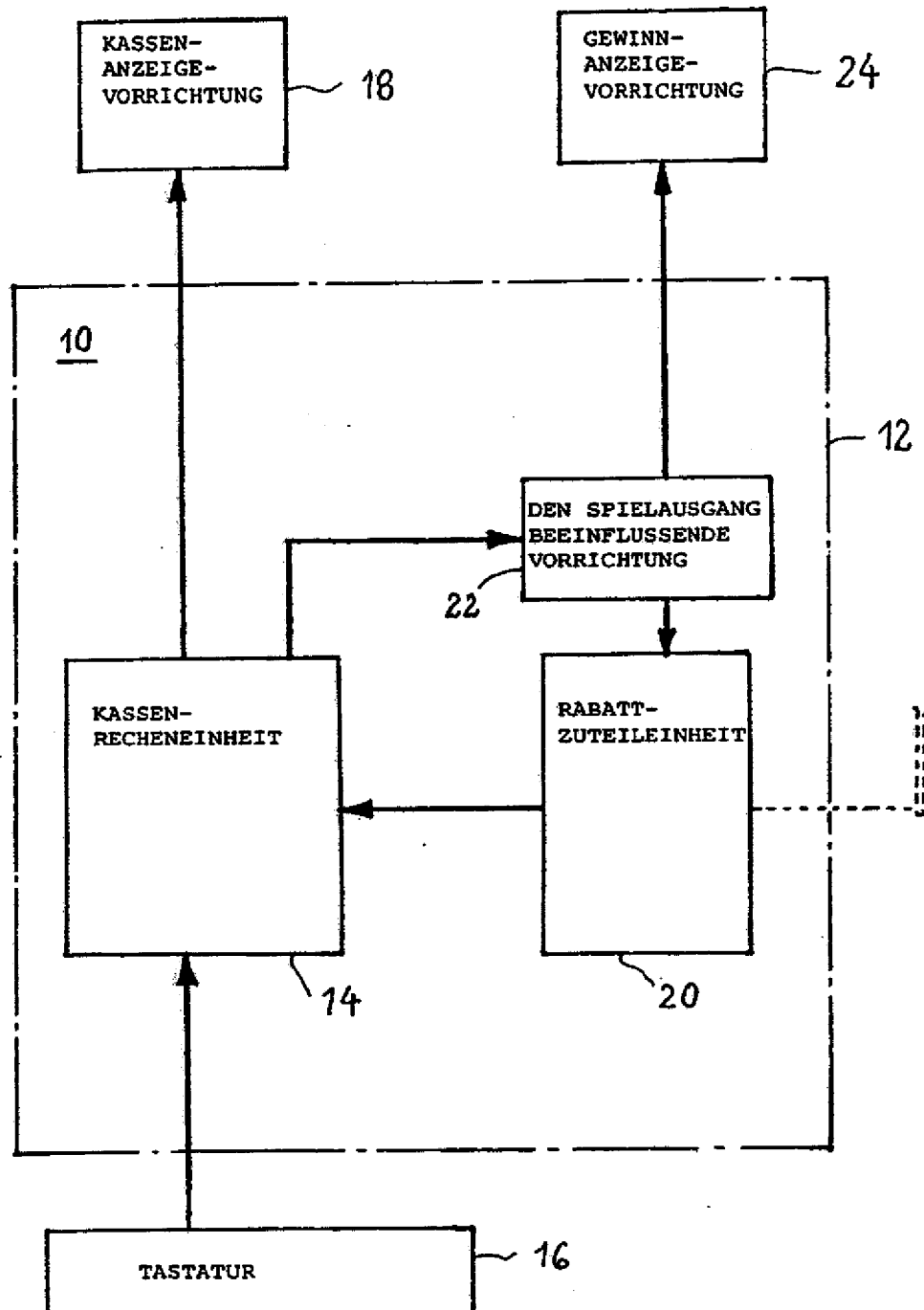


Fig. 4





JAPANESE PATENT OFFICE -- Patent Abstracts of Japan

Publication Number: 04314189 A

Date of Publication: 1992.11.05

Int.Class: G07B 1/00

Date of Filing: 1991.04.12

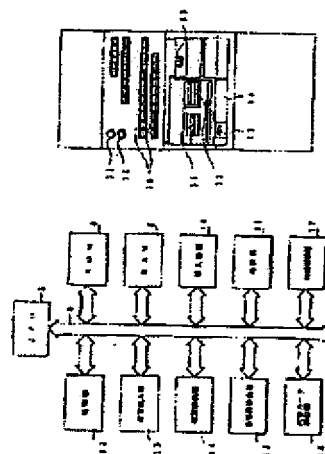
Applicant: OMRON CORP  
Inventor: TAKENOUCHI HITOSHI  
AUTOMATIC TICKET MACHINE

Abstract:

PURPOSE: To continue ticket issuance even when change is exhausted by ejecting an equivalent alternate card alternately when return money is in short supply.

CONSTITUTION: A CPU 2 detects difference between thrown in amount and selected fare amount, and judges whether or not the change is in short supply by collating it with the fare amount accumulated in a change accumulation part 17. When the required kind of money of the change is accumulated, an instructed passenger ticket is ejected, and prescribed change is ejected from a paper money insertion/ejection port 22 or a coin ejection port 24. Meanwhile, it is recognized that the change is in short supply, a card alternately usable button 31 and a card alternately unusable button 32 are flashed, and when it is judged that ejection by an alternate card can be permitted instead of the change by a user, the card alternately usable button 31 is depressed. Thereby, the instructed passenger ticket is ejected, and also, the alternate card is ejected from the alternate card ejection port 26 of an alternate card ejection part 16. Also, the alternate card is a card equivalent to the amount of change.

COPYRIGHT: (C)1992,JPO & Japio



WPI Acc No: 92-374739/199246

XRPX Acc No: N92-285649

Identifying users of coupons - by marking set of stamps with code that identifies particular user and then securing stamps on each coupon that user exchanges

Patent Assignee: DONNELLEY & SONS CO R R (DONS )

Inventor: SAVIN R H

Number of Countries: 016 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
EP 512413	A2	19921111	EP 92107388	A	19920430	G06K-017/00	199246 B
CA 2066056	A	19921109	CA 2066056	A	19920415	G06K-019/00	199305
EP 512413	A3	19930922	EP 92107388	A	19920430	G06K-017/00	199509

Priority Applications (No Type Date): US 91697068 A 19910508

Cited Patents: No-SR.Pub; 1.Jnl.Ref; DE 2823509; EP 354260; JP 53017238; US 1592931; US 3890599; US 4554446; US 4908761

Patent Details:

Patent	Kind	Lan	Pg	Filing	Notes	Application	Patent
--------	------	-----	----	--------	-------	-------------	--------

EP 512413	A2	E	8				
-----------	----	---	---	--	--	--	--

Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU MC NL PT SE

Abstract (Basic): EP 512413 A

The method involves producing a set of identifiers and marking each identifier in the set with a specific identifying indicia. The marked set of identifiers is provided to a user associated with specific identifying indicia. The user is instructed to secure at least one of the identifiers to an item such as a coupon and to obtain a first article using the item.

The identifying indicia are then read. The identifying indicia on each identifier also recorded in a database and the indicia comprises a bar -code .

USE/ADVANTAGE - For identifying users of coupons and other documents for studies of purchasing habits etc. Reduces potential of fraud associated with redemption of coupons etc.

Dwg.1/4

Title Terms: IDENTIFY; USER; COUPON ; MARK; SET; STAMP; CODE; IDENTIFY; USER; SECURE; STAMP; COUPON ; USER; EXCHANGE

Derwent Class: T04; T05

International Patent Class (Main): G06K-017/00; G06K-019/00

International Patent Class (Additional): G06F-015/24

File Segment: EPI

Manual Codes (EPI/S-X): T04-A03B1; T05-L01X

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



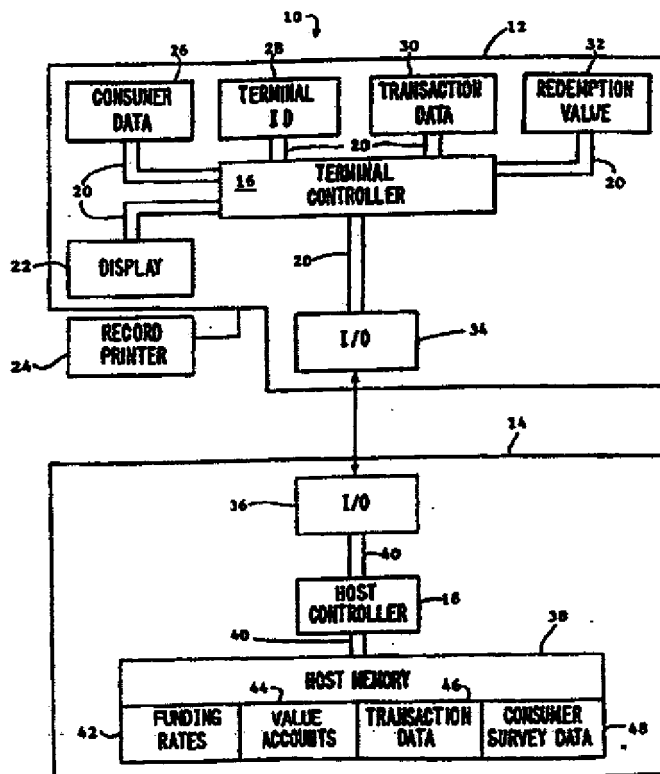
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>G06F 17/60</b>		A1	(11) International Publication Number: <b>WO 97/46961</b>
			(43) International Publication Date: 11 December 1997 (11.12.97)
(21) International Application Number: <b>PCT/US97/09085</b>		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TO).	
(22) International Filing Date: <b>30 May 1997 (30.05.97)</b>			
(30) Priority Data: 08/659,442 6 June 1996 (06.06.96) US 08/815,691 12 March 1997 (12.03.97) US			
(71) Applicant: PROVIDENT BANCORP, INC. [US/US]; 1 East Fourth Street, Cincinnati, OH 45202 (US).			
(72) Inventors: KOCH, Roland, Edward; 2589 Countrylake Drive, Cincinnati, OH 45233 (US). ENGEL, David, R.; 4130 Dry Ridge Road, Cincinnati, OH 45247 (US). DAVIS, Allen, Lee; 8255 Kroger Farm Road, Cincinnati, OH 45243 (US).		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(74) Agents: GOTTMAN, James, F. et al.; Killworth, Gottman, Hagan & Schaeff, L.L.P., One Dayton Centre, Suite 500, One South Main Street, Dayton, OH 45402-2023 (US).			

(54) Title: POINT OF SALE PURCHASING VALUE ACCUMULATION SYSTEM

(57) Abstract

A neutrally branded, multi merchant redeemable purchasing value accumulation system (10) is provided covering all forms of payment, integrated with the point of sale, and providing real-time earning and redemption of redeemable purchasing value at the point of sale. According to one embodiment, the system (10) includes an authorized point of sale transaction terminal (12), a host memory (38) located remote from the authorized point of sale transaction terminal (12), and a host controller (18) located remote from and in communication with the authorized point of sale transaction terminal (12). A purchasing value banking system (100) is provided comprising a merchant system (105) incorporating a merchant terminal (116), a bank host (104) incorporating a bank account data storage device (114) and an authorization number source (112), and a purchasing value banking system host (102) in communication with the merchant system (105) and the bank host (104).



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SW	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Gambia	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroun	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Lichtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## POINT OF SALE PURCHASING VALUE ACCUMULATION SYSTEM

### BACKGROUND OF THE INVENTION

5       The present invention relates to a neutrally  
branded, multi merchant frequent shopper program  
covering all forms of payment and integrated with the  
point of sale.

      Conventional frequent shopper systems or programs,  
10   i.e., systems where a consumer accumulates points or  
cash based upon the consumer's expenditures, have been  
problematic for a variety of reasons. A system where  
points are awarded as a function of the consumer's  
expenditures is problematic because the consumer does  
15   not accumulate real purchasing value. Rather, the  
consumer merely accumulates points which have a real  
value set arbitrarily by the particular company awarding  
the points. Further, the options for redeeming or  
spending the points are often limited to a predetermined  
20   catalog of merchandise or services. Finally, the  
accumulated points are often subject to expiration or  
devaluation if they are not spent by a certain date.

      Some frequent shopper systems, including the system  
disclosed in U.S. Patent No. 5,287,268, provide for  
25   accumulation of an actual cash balance. However, these  
systems are problematic because the cash balance is not  
immediately accessible by the consumer at the point of  
sale. Rather, the consumer is either sent a check for  
the accumulated amount at the end of a specified period  
30   or may access the money through an electronic terminal  
at the end of a specified period. Further, in the case  
of the frequent shopper system described in U.S. Patent  
No. 5,287,268, although a cash balance is accumulated as  
a percentage of the consumer's expenditures, the



merchant is permitted to arbitrarily vary the accumulation percentage at the point of sale.

Other frequent shopper systems are limited to a single form of payment wherein points or cash are earned  
5 only when the specific form of payment is utilized at the point of sale.

Accordingly, there is a need for a neutrally branded frequent shopper system that ensures the consumer an adequate rate of accumulation which may not  
10 be altered at the point of sale, establishes a redeemable purchase value account which is reserved in the name of the consumer and which is not subject to arbitrary devaluation or expiration, establishes a redeemable balance which is accessible at the point of  
15 sale through integration with the point of sale, which is continuously accessible as a redeemable purchasing value accumulates, and which responds universally to multiple forms of payment.

Additionally, the present invention relates to a  
20 banking system and, more particularly, to a banking system incorporating a purchasing value banking system host wherein banking operations are performed at respective merchant terminals in communication with the purchasing value banking system host.

25 Conventional banking systems, as illustrated in Fig. 11, provide services through a network consisting of a central bank or bank host 200, a set of branch offices 210, and an automated teller network 220. As a bank's customer base increases, so too must its  
30 resources. However, continuing expansion of the conventional banking system requires significant investment in human resources and banking hardware, e.g., branch offices, personal tellers, and automated teller machines. Accordingly, there is a need for an  
35 improved banking system which provides for expansion of

services at a relatively low cost.

#### BRIEF SUMMARY OF THE INVENTION

According to the present invention, a redeemable  
5 purchasing value accumulation system is integrated with  
a point of sale and provides real time earning and  
redemption of purchasing value at the point of sale.  
Further, a purchasing value banking system is provided  
comprising a merchant system, a bank host, and a  
10 purchasing value banking system host in communication  
with the merchant system and the bank host. Banking  
operations are performed by selecting an operation at a  
merchant terminal within the merchant system and by  
communicating the selection to the bank host via the  
15 purchasing value banking system host. In this manner,  
banking services are expanded at low cost by coupling  
the bank host to a purchasing value banking system  
created and maintained under a separate cost center or  
merely by coupling the bank host to existing purchasing  
20 value system hardware.

In accordance with one embodiment of the present  
invention, a point of sale redeemable purchasing value  
accumulation system is provided comprising: an  
authorized point of sale transaction terminal including  
25 a terminal display, a transaction record printer, a  
consumer data recording member responsive to a consumer  
identifier, a transaction terminal identifier, a  
transaction value recording member, a redemption value  
recording member, and a transaction terminal data  
30 input/output port; a host memory located remote from the  
authorized point of sale transaction terminal; and a  
host controller located remote from and in communication  
with the authorized point of sale transaction terminal  
and operative to calculate a transaction credit value  
35 based upon a credit rate stored in the host memory and

based upon a transaction value input at the authorized point of sale transaction terminal, increase an account balance in a redeemable purchase value account designated by the consumer data recording member based upon the transaction credit value, decrease the account balance in the redeemable purchase value account based upon a redemption value input at the authorized point of sale transaction terminal, and send transaction data and redeemable purchase value account balance data to the authorized point of sale transaction terminal.

In accordance with another embodiment of the present invention, a point of sale redeemable purchasing value accumulation system is provided comprising: a plurality of authorized point of sale transaction terminals, each of the terminals including a terminal display, a transaction record printer, a consumer data recording member, a transaction terminal identifier, a transaction value recording member, a redemption value recording member, and a transaction terminal data input/output port; a host memory located remote from the plurality of authorized point of sale transaction terminals; and a host controller located remote from and in communication with the plurality of authorized point of sale transaction terminals and operative to calculate a transaction credit value based upon a credit rate stored in the host memory and a transaction value input at a selected one of the plurality of authorized point of sale transaction terminals, increase an account balance in a redeemable purchase value account designated by the consumer data recording member at the selected authorized point of sale transaction terminal based upon the transaction credit value, decrease an account balance in the redeemable purchase value account based upon a redemption value input at the selected authorized point of sale transaction terminal, and send

transaction data and redeemable purchase value account balance data to the selected authorized point of sale transaction terminal.

In accordance with yet another embodiment of the present invention, a neutrally-branded, multi-merchant, frequent shopper system integrated with a consumer point of sale at a plurality of participating merchants and covering all forms of payment is provided comprising: a consumer redeemable purchase value account established for at least one participating consumer; an authorized point of sale transaction terminal located at a selected participating merchant and including a total expenditure value recording member and a redemption value recording member, wherein the redemption value recording member is operative to record a redemption value which may be limited to a value less than or equal to a balance in the consumer redeemable purchase value account; a net expenditure value determining member responsive to the total expenditure value and the redemption value; and a host controller located remote from and in communication with the authorized point of sale transaction terminal and operative to determine a credit value associated with an expenditure transaction processed at the authorized point of sale transaction terminal, the credit value being a function of a credit rate stored at a location remote from the selected participating merchant and a function of the net expenditure value; increase the balance in the consumer redeemable purchase value account in accordance with the credit value; decrease the balance in the consumer redeemable purchase value account in accordance with the redemption value; and issue a transaction receipt indicating the total expenditure value, the redemption value, the net expenditure value, the credit value, and the balance.

In accordance with yet another embodiment of the present invention, a point of sale redeemable purchasing value accumulation system is provided comprising: a first authorized point of sale transaction terminal including a terminal display, a transaction record printer, a consumer data recording member, a transaction terminal identifier, a transaction value recording member, a redemption value recording member, and a transaction terminal data input/output port; a second authorized point of sale transaction terminal including a terminal display, a transaction record printer, a consumer data recording member, a transaction terminal identifier, an absolute credit value recording member, and a transaction terminal data input/output port; a host memory located remote from the first and second authorized point of sale transaction terminals; and a host controller located remote from and in communication with the first and second authorized point of sale transaction terminals and operative to calculate a transaction credit value based upon a credit rate stored in the host memory and based upon a transaction value input at the first authorized point of sale transaction terminal, increase an account balance in a redeemable purchase value account designated by the consumer data recording member based upon the transaction credit value, decrease the account balance in the redeemable purchase value account based upon a redemption value input at the first authorized point of sale transaction terminal, increase the account balance in the redeemable purchase value account based upon an absolute transaction credit value recorded by the absolute credit value recording member, and send transaction and redeemable purchase value account balance data to the authorized point of sale transaction terminal.

In accordance with yet another embodiment of the present invention, a method of accumulating redeemable purchasing value based upon a point of sale transaction is provided comprising the steps of: designating a  
5 redeemable purchase value account at an authorized point of sale transaction terminal; transmitting a designated redeemable purchase value account identifier and a transaction value input at the authorized point of sale transaction terminal to a host located remote from the  
10 authorized point of sale transaction terminal; calculating a transaction credit value based upon a credit rate stored in a host memory located remote from the authorized point of sale transaction terminal and based upon the transaction value input at the authorized  
15 point of sale transaction terminal; increasing an account balance in the redeemable purchase value account based upon the transaction credit value; decreasing an account balance in the redeemable purchase value account based upon a redemption value input at the authorized  
20 point of sale transaction terminal; and sending transaction data and redeemable purchase value account balance data from a host located remote from the authorized point of sale transaction terminal to the authorized point of sale transaction terminal.

25 In accordance with yet another embodiment of the present invention, a method of accumulating redeemable purchasing value based upon a point of sale transaction is provided comprising: designating a redeemable purchase value account at a selected one of a plurality  
30 of authorized point of sale transaction terminals; transmitting a designated redeemable purchase value account identifier and a transaction value input at the selected authorized point of sale transaction terminal to a host located remote from the plurality of  
35 authorized point of sale transaction terminals;

calculating a transaction credit value based upon a credit rate stored in a host memory located remote from the plurality of authorized point of sale transaction terminals and based upon a transaction value input at the selected authorized point of sale transaction terminal; increasing an account balance in the designated redeemable purchase value account based upon the transaction credit value; decreasing an account balance in the redeemable purchase value account based upon a redemption value input at the selected authorized point of sale transaction terminal; and sending transaction data and redeemable purchase value account balance data from a host located remote from the plurality of authorized point of sale transaction terminals to the selected authorized point of sale transaction terminal.

In accordance with yet another embodiment of the present invention, a method for implementing a neutrally-branded, multi-merchant, frequent shopper program integrated with the point of sale and covering all forms of payment is provided comprising the steps of: identifying a set of participating merchants; identifying at least one participating consumer; establishing a consumer redeemable purchase value account for the at least one participating consumer; determining a total expenditure value associated with a participating consumer expenditure transaction at a selected participating merchant; determining a redemption value associated with the participating consumer expenditure transaction, the redemption value which may be limited to a value less than or equal to a balance in the consumer redeemable purchase value account; determining a net expenditure value associated with the participating consumer expenditure transaction, the net expenditure value being a function of the total

expenditure value and the redemption value; determining a credit value associated with the participating consumer expenditure transaction, the credit value being a function of a credit rate stored at a location remote from the selected participating merchant and a function of the net expenditure value or the total expenditure value; increasing the balance in the consumer redeemable purchase value account in accordance with the credit value; decreasing the balance in the consumer redeemable purchase value account in accordance with the redemption value; and issuing a transaction receipt indicating the total expenditure value, the redemption value, the net expenditure value, the credit value, and the balance.

In accordance with yet another embodiment of the present invention, a method of accumulating redeemable purchasing value based upon a point of sale transaction is provided comprising: calculating a transaction credit value based upon a credit rate stored in a host memory located remote from a first and a second authorized point of sale transaction terminal and based upon a transaction value input at the first authorized point of sale transaction terminal; producing an absolute credit value at the second authorized point of sale transaction terminal; increasing an account balance in a redeemable purchase value account designated at the first authorized point of sale transaction terminal based upon the transaction credit value; increasing the account balance based upon the absolute credit value; decreasing an account balance in the redeemable purchase value account based upon a redemption value input at the authorized point of sale transaction terminal; and sending transaction data and redeemable purchase value account balance data from a host located remote from the authorized point of sale transaction terminal to the authorized point of sale transaction terminal. The



absolute credit value may correspond to a value indicated on an authorized system coupon, a value indicated on an authorized system rebate, or a value indicated on an authorized system absolute credit.

5 In accordance with yet another embodiment of the present invention, a point of sale transaction terminal is provided operative to: display and print transaction data; detect and transmit a consumer identifier; produce and transmit a transaction terminal identification  
10 signal; record and transmit a transaction value; record and transmit a redemption value; and communicate with a host controller located remote from the point of sale transaction terminal so as to receive the transaction data including a transaction credit value and an account  
15 balance in a redeemable purchase value account corresponding to the consumer identifier.

In accordance with yet another embodiment of the present invention, a purchasing value banking system is provided comprising a merchant system, a bank host, and  
20 a purchasing value banking system host. The merchant system incorporates a merchant terminal and the merchant terminal comprises a banking operation interface and a consumer data recording member operative to identify and transmit a purchase value account number and a bank  
25 account number. The bank host incorporates a bank account data storage device. The purchasing value banking system host is in communication with the merchant system and the bank host. The merchant system may further incorporate a merchant host in communication  
30 with one or more merchant terminals. The bank host may further incorporate an authorization number source.

The system host is operative to (i) receive the purchase value account number and the bank account number, (ii) process purchase value account information  
35 as a function of an expenditure transaction executed at

the merchant terminal, (iii) transfer banking operation information and the bank account number from the merchant system to the bank host in response to a banking operation selected at the banking operation interface, and (iv) transfer a banking operation authorization signal from the bank host to the merchant system. The purchase value account information preferably corresponds to a value accumulated as a function of an expenditure transaction executed at a merchant terminal.

In accordance with yet another embodiment of the present invention, a method of executing a banking operation is provided comprising the steps of: identifying a purchase value account number and a bank account number at a merchant terminal; transmitting the purchase value account number and the bank account number to a purchasing value banking system host in communication with the merchant terminal; processing purchase value account information at the purchasing value banking system host as a function of an expenditure transaction executed at the merchant terminal; selecting at least one banking operation at a banking operation interface incorporated in the merchant terminal; transferring information corresponding to the selected banking operation from the merchant terminal to the bank host; and, transferring a banking operation authorization signal from the bank host to the merchant system. The processing step preferably includes the step of accumulating a value as a function of the expenditure transaction.

In accordance with yet another embodiment of the present invention, a merchant terminal is provided to be operative to: identify a purchase value account number and a bank account number; transmit the purchase value account number and the bank account number to a

purchasing value banking system host in communication with the merchant terminal; transmit expenditure transaction data to the purchasing value banking system host, wherein the expenditure transaction data  
5 corresponds to an expenditure transaction executed at the merchant terminal; permit selection of at least one banking operation at a banking operation interface incorporated in the merchant terminal; transmit information corresponding to a selected banking  
10 operation to the purchasing value banking system host; and receive a banking operation authorization signal from the bank host. The merchant terminal is preferably further operative to initiate selective deposit and withdrawal of funds from a specific bank account.

15 Accordingly, it is an object of the present invention to provide a neutrally branded, multi-merchant frequent shopper system and program which is integrated with the point of sale, which covers all forms of payment, and which provides for real time purchasing  
20 value earning and redemption. It is a further object of the present invention to provide a purchasing value banking system comprising a merchant system, a bank host, and a purchasing value banking system host in communication with the merchant system and the bank host  
25 such that present and expanded services may be provided at relatively low costs.

#### BRIEF DESCRIPTION OF THE DRAWINGS

30 Fig. 1 is a schematic diagram of a point of sale redeemable purchasing value accumulation system according to the present invention;

Fig. 2 is a schematic diagram of a point of sale redeemable purchasing value accumulation system incorporating an integrated cash register according to  
35 the present invention;

Fig. 3A is a schematic diagram of a point of sale redeemable purchasing value accumulation system according to the present invention including a plurality of point of sale terminals;

5 Fig. 3B is a schematic diagram of a point of sale redeemable purchasing value accumulation system according to the present invention including a plurality of point of sale terminals and a merchant host;

10 Fig. 4 is an illustration of an authorized point of sale transaction terminal according to the present invention;

Fig. 5 is an illustration of a consumer identification card according to the present invention;

15 Fig. 6 is an illustration of a form by which a consumer identification card may be issued at the point of sale according to the present invention;

Fig. 7 is a schematic diagram of a dual terminal point of sale redeemable purchasing value accumulation system according to the present invention;

20 Figs. 8A and 8B are illustrations of transaction records printed in accordance with the present invention;

Fig. 9 is a schematic block diagram of a purchasing value banking system according to the present invention;

25 Fig. 10 is an illustration of an authorized point of sale transaction terminal for a purchasing value banking system according to the present invention; and

Fig. 11 is a schematic block diagram of a conventional banking system.

30

#### DETAILED DESCRIPTION OF THE INVENTION

Fig. 1 illustrates the components of a point of sale (POS) redeemable purchasing value accumulation system 10. The POS redeemable purchasing value accumulation system 10 includes an authorized point of sale transaction terminal 12 and a system host 14. The

35

system host 14 is located remote from the point of sale transaction terminal 12 and is typically a centralized system mainframe. Specifically, the system host 14 is not physically present at the point of sale. The overall operation of the transaction terminal 12 is controlled by the terminal controller 16. The overall operation of the system host 14 is controlled by the host controller 18. The terminal controller 16 and the host controller 18 are most commonly digital central processing units (CPU). The terminal controller 16 is coupled to and in communication with an external transaction record printer 24. Additionally, the terminal controller 16 is in communication with a terminal display 22, a consumer data recording member 26, a transaction terminal identifier 28, a transaction data recording member 30, a redemption value recording member 32, and a transaction terminal data input/output port 34 via data, address, and control buses, represented generally by the bus lines 20. The terminal controller 16, terminal display 22, transaction record printer 24, consumer data recording member 26, transaction terminal identifier 28, transaction data recording member 30, redemption value recording member 32, and transaction terminal data input/output port 34 function according to the operating program resident in a memory (not shown) associated with the terminal controller 16. The characteristics of the operating program are illustrated below in the description of the manner of operation of the POS redeemable purchasing value accumulation system 10.

The terminal display 22 is a visual display capable of displaying transaction data and may be any suitable display device, including an LCD display or a CRT display. The transaction record printer 24 is preferably a compact printer for providing a printed

record of a transaction or a batch of transactions and preferably provides simultaneous multiple copies of the printed transaction record, e.g., a top copy for the merchant and a bottom copy for the customer. It is contemplated by the present invention that the transaction record printer 24 can be an external printer coupled to the terminal 12 or a printer integrated with the body of the terminal 12.

The consumer data recording member 26, a specific example of which is described in detail below with respect to Fig. 4, provides a means by which a specific consumer identifier and a redeemable purchase value account are designated, selected, or identified at the transaction terminal 12. The redeemable purchase value account balance corresponds to a monetary amount which may be used towards the purchase of goods or services at any one of a plurality of authorized merchants. The transaction data recording member 30, an example of which is also described in detail below with respect to Fig. 4, provides a means by which a specific transaction value and other transaction data is selected or recorded at the transaction terminal 12 and input to the terminal controller 16. Similarly, the redemption value recording member 32, an example of which is described in detail below with respect to Fig. 4, provides a means by which a specific redemption value is selected or recorded at the transaction terminal 12 and input to the terminal controller 16. The transaction terminal identifier 28 is a device, e.g. an electronic memory, which stores a signal indicative of the identity of a particular authorized transaction terminal 12.

Information indicative of the designated specific consumer identifier and redeemable purchase value account, the specific transaction value and other transaction data, the specific redemption value, and the

transaction terminal identification signal are sent to, and/or accessible to, the system host 14 via the transaction terminal data input/output port 34. In this manner the point of sale transaction terminal 12 is  
5 operative to display and print transaction data, detect and transmit a consumer identifier, produce and transmit a transaction terminal identification signal, record and transmit a transaction value, record and transmit a redemption value, and communicate with the host  
10 controller 18 located remote from the point of sale transaction terminal 12 so as to receive transaction data including a transaction funding value and an account balance in a redeemable purchase value account corresponding to the consumer identifier.

15 The host controller 18 is in communication with a system host data input/output port 36, and a host memory 38 via data, address, and control buses, represented generally by the host bus lines 40. The host controller 18, the host data input/output port 36, and the host  
20 memory 38 function according to the operating program resident in a memory (not shown) associated with the host controller 18. The characteristics of the operating program are illustrated below in the description of the manner of operation of the POS  
25 redeemable purchasing value accumulation system 10. The host memory 38 includes transaction funding rate storage 42, redeemable purchase value account balance storage 44, transaction data storage 46, and consumer survey data storage 48.

30 In a preferred manner of operating the POS redeemable purchasing value accumulation system 10, when a consumer is present at the point of sale, or is in communication with the point of sale, for the purpose of executing an expenditure transaction for goods or  
35 services, a sequence of steps is completed in order to

accumulate a purchasing value amount as an account balance in a redeemable purchase value account reserved for the consumer. First, the consumer indicates a mode of payment, i.e., credit, debit, cash, or check, and the merchant processes the payment at the point of sale and records the mode of payment via the transaction data recording member 30. Next, data specific to the consumer is recorded at the consumer data recording member 26 and the expenditure amount is entered via the transaction data recording member 30. The data so recorded is then sent to the system host 14 for processing. The system host 14, according to data stored in the host memory 38, is operative to: (i) calculate a transaction funding value based upon a funding rate stored in the host memory 38 and based upon the transaction value input at the authorized point of sale transaction terminal 12; (ii) increase the account balance in the consumer's redeemable purchase value account as designated by the consumer data recording member 26 based upon the calculated transaction funding value; and (iii) send transaction data and redeemable purchase value account balance data to the authorized point of sale transaction terminal. The transaction terminal controller 16 subsequently effects printing of a record, see Fig. 8A, via the record printer 24, indicating data which may include the merchant name, the date and time of the transaction, the consumer's redeemable purchase value account number, a card and transaction type, the terminal identification number, an authorization code, a transaction record number, the expenditure or purchase amount, the transaction funding value, and the current redeemable purchase value account balance.

It is contemplated by the present invention that a tip amount may also be entered following the purchase



amount entry. Further, it is contemplated by the present invention that, following the purchase amount entry a clerk or server identification number may be entered via the transaction data recording member 30.

5 Further, in a preferred manner of operating the POS redeemable purchasing value accumulation system 10, a consumer may execute a redemption transaction at the point of sale by using a portion of the consumer's  
10 redeemable purchase value account balance as partial or full payment for goods or services provided by the merchant. To execute the redemption, a redemption transaction is selected at the transaction terminal 12, a redemption amount is entered via the redemption value recording member 32 after the above described entry of  
15 the purchase amount. If a redemption amount is entered, the transaction value, or net expenditure value, is the difference between a total cost or expenditure value for the goods or services and the redemption value. Further, the system host 14, according to data stored in  
20 the host memory 38, is operative to decrease the account balance in the redeemable purchase value account based upon the redemption value input at the authorized point of sale transaction terminal 12. The transaction terminal controller 16 subsequently effects printing of  
25 a record, see Fig. 8B, via the record printer 24, which, in addition to the data illustrated in Fig. 8A, indicates the total expenditure value, the redemption value, the transaction value, and the current redeemable purchase value account balance reflecting the most  
30 recent transaction funding and redemption values.

A consumer may execute a return transaction at the point of sale because the host controller is further operative to decrease the account balance in the redeemable purchase value account based upon a  
35 transaction cancellation or a merchandise return. In

the event a return transaction results in a negative redeemable account balance, the system is further operative to charge the consumer's system funding account, if one is held by the consumer, accordingly.

5       A redemption blocked consumer identifier may be selected according to the present invention because the host controller is operative to block input of a redemption value when a redemption blocked consumer identifier is detected by the consumer data recording  
10 member 26. Additionally, the host controller is operative to activate and inactivate a redemption block for a specific consumer identifier.

Access to consumer redeemable purchase value accounts is limited to transactions including an  
15 expenditure or return transaction processed or executed at a point of sale transaction terminal in authorized communication with the host controller. In this manner, redemptions and credits remain within the redeemable purchasing value accumulation system. Authorized  
20 consumers, authorized merchants, and authorized terminals are identified as such in the host memory 38. The host memory 38 may be continuously reprogrammed to incorporate additional authorized consumers, merchants, and terminals.

25       Fig. 2 illustrates an embodiment of the present invention wherein the POS cash register 50 is integrated with the authorized point of sale transaction terminal 12 such that all data entries input to the cash register 50 are processed by the terminal controller 16. In this  
30 manner, it is not necessary for the clerk at the point of sale to first process the payment at an stand alone cash register and then enter the expenditure amount and the payment mode at the transaction terminal 12 because the expenditure amount and the mode of payment are  
35 available for processing by the terminal controller 16

upon entry at the integrated cash register 50. If an integrated cash register 50 is not used then it is preferable for a clerk at the point of sale to mark the cash register receipt to indicate that a transaction was processed or executed at the transaction terminal 12 in connection with the purchase or that an increase in the consumer's redeemable purchase value account balance has been effected. For example, the cash register receipt may be marked with an embossing stamp, an imprinting stamp, or a writing implement.

Fig. 7 illustrates an embodiment of the present invention wherein a second authorized point of sale transaction terminal 12' is provided in addition to the authorized point of sale transaction terminal 12, described above with reference to Fig. 1. The second terminal 12' includes a terminal controller 16', a terminal display 22', a transaction record printer 24', a consumer data recording member 26', a transaction terminal identifier 28', an absolute funding value recording member 8, and a transaction terminal data input/output port 34'. The second terminal 12' is provided so as to permit absolute redeemable purchasing value accumulation in a consumer's account, as opposed to accumulation which is merely a function of a predetermined funding rate stored in the host memory 38. Specifically, where the second terminal 12' is included in the redeemable purchasing value accumulation system 10, a value indicated on an authorized system coupon, a value indicated on an authorized system rebate, or a value indicated on an authorized system absolute funding form may be directly credited to the consumer's account by the clerk or server at the point of sale.

The POS redeemable purchasing value accumulation systems 10 illustrated in Figs. 3A and 3B incorporate a plurality of authorized point of sale transaction

terminals 12. At least one authorized transaction terminal 12 is located at the point of sale of each merchant of an identified set of authorized merchants. The set of authorized merchants and all authorized consumers are identified by the host memory 38. In the POS redeemable purchasing value accumulation system 10 illustrated in Fig. 3A, each of the plurality of transaction terminals 12 is in communication with the system host 14 and the host controller 18. In the POS redeemable purchasing value accumulation system 10 illustrated in Fig. 3B, each of the plurality of transaction terminals 12 is in communication with a merchant host 15 which, in turn, is in communication with the system host 14 and the host controller 18. When a plurality of authorized transaction terminals are included in the POS redeemable purchasing value accumulation system 10, the host controller 18 is operative to: (i) calculate a terminal specific transaction funding value based upon one of a plurality of host programmed funding rates stored in the host memory 38 and based upon a terminal transaction value input at a selected authorized point of sale transaction terminal 12; (ii) increase an account balance in a redeemable purchase value account designated by the consumer data recording member 26 associated with the selected authorized point of sale transaction terminal 12 based upon the terminal specific transaction funding value; (iii) decrease the account balance in the designated redeemable purchase value account based upon a redemption value input at the selected authorized point of sale transaction terminal 12; and (iv) send terminal specific transaction data and redeemable purchase value account balance data to the selected authorized point of sale transaction terminal 12.

Fig. 4 illustrates the authorized point of sale transaction terminal 12 including a plurality of function keys 52 forming a keyboard or keypad on the face of the transaction terminal 12 and a compact digital display 54.

The payment mode is selected and recorded by depressing one of the payment mode keys. The "CREDIT" and "DEBIT" keys are selected according to whether payment is to be processed through a credit or debit card. The "PRIV" key is selected if payment is to be processed through a private label credit card. The "MERIT" key is selected if payment is to be cash or check. The "REPRINT" key initiates reprinting of the transaction record. The "RECALL" key recalls the last response. The "MGR" initiates entry into a manager mode where appropriate passwords, the terminal identifier, and other data may be programmed. The "SETUP" key initiates entry into a terminal setup mode which is described below. The numerical keys facilitate entry of numerical data, e.g., transaction value, redemption value, etc. The four return keys are used to initiate merchandise returns corresponding to the indicated payment modes. The "Clear" key aborts a process or clears an entry. The two offline keys initiate offline payment. The "TABS" key initiates opening, closing, or deletion of customer tabs. The "VOID" key voids a transaction. The "MERIT REDEMPTION" key initiates a redemption transaction. The "Alpha" key initiates selection of an alpha symbol. The "\*" key and the "#" key initiate left and right scrolling. The "TIP" key initiates tip entry. The "FUNC/ENTER" key initiates selection of a function and entry of data.

The authorized point of sale transaction terminal 12 illustrated in Fig. 4 also includes a card reading slot 56 for reading a consumer identifier stored, either

magnetically, optically, or otherwise, on a consumer identification card 60. Fig. 5 is an illustration of the face of a consumer identification card 60 according to the present invention. In addition to the optically or magnetically stored consumer identifier (not shown),  
5 the consumer identification card includes a visually recognizable consumer name 62, an identification/account number 64, and a "member since" date 66. The identification card 60 may also include an expiration  
10 date (not shown).

After the transaction terminal reads the consumer identifier or after the consumer identifier is manually recorded using the numerical function keys, the transaction value is recorded by the transaction data  
15 recording member 30 upon entry of a purchase and/or redemption amount using the numerical function keys. To enter or record a redemption amount at the redemption value recording member 32 a redemption transaction is initiated by depressing the "MERIT REDEMPTION" key and,  
20 subsequently, the redemption value is entered using the numerical function keys.

The terminal controller 16 may be set up to initiate a card number and expiration date verification sequence when the identification card 60 is passed  
25 through the card reading slot 56. Further, the terminal controller 16 is responsive to a consumer identification card 60 which is operative as one of a credit card, a debit card, a cash/check card, or combinations thereof. Further, the consumer identification card 60 may carry a  
30 plurality of consumer identifiers and either the host controller or the transaction terminal is operative to prompt a consumer to select one of the plurality of consumer identifiers at the point of sale. Additionally, the consumer identification card 60 is  
35 capable of carrying a consumer identifier representing a

redeemable purchase value account which is pooled among a plurality of consumers. It is also contemplated by the present invention that the consumer identification card 60 may be operative as a pre-paid redeemable purchasing value card wherein the account balance in a corresponding redeemable purchase value account corresponds to a pre-paid redeemable purchasing value of the pre-paid redeemable purchasing value card.

The POS redeemable purchasing value accumulation system 10 also provides a convenient means by which a consumer identification card may be instantly issued at the point of sale to establish a consumer redeemable purchase value account for a participating consumer. A consumer located at the point of sale and wishing to obtain a consumer identification card 60 in order to begin accumulating an account balance immediately, fills out the information on an instant issue form 70, see Fig. 6. The point of sale merchant then transfers the information to the host, records consumer identification indicia on a detachable portion 72 of the instant issue form, and detaches an instant issue card 74 from the form 70 by tearing or cutting along perforation 76. A permanent consumer identification card 60 is subsequently sent to the consumer through the mail, or otherwise. The instant issue form also includes a consumer survey section 78 and a membership profile section 80.

In another embodiment of the present invention the consumer identifier is stored on a system credit card and the host controller 18 is further operative to calculate an additional transaction funding value based upon an additional funding rate stored in the host memory and based upon a payment amount processed through the system credit card. In this manner, the consumer receives a first transaction funding value based upon an

expenditure at the point of sale and a second transaction funding value based upon the consumer's use of the system credit card. It is contemplated by the present invention that the first and second funding values may accumulate in a single redeemable purchase value account. However, it may be preferable to place certain restrictions on the purchasing value balance resulting from the second funding value to increase system versatility. For example, a minimum spending amount may be required before the second funding value is accumulated.

The POS redeemable purchasing value accumulation system 10 of the present invention is also capable of enabling generation of a series of transaction related reports. For example, transaction information is stored in the transaction data storage 46 of the host memory 38 to enable generation of periodic point of sale transaction reports. Each point of sale transaction report, detailing each transaction processed or executed at the particular point of sale terminal, is preferably sent to a manager associated with the point of sale terminal.

Consumer specific survey information, either gathered from the consumer survey section 78 of the instant issue form 70, or otherwise, is stored in the consumer survey data storage 48. The consumer specific data present in the consumer survey data storage 48 is correlated with the transaction information stored in the transaction data storage 46 to enable generation of periodic profile reports detailing the correlated consumer specific survey and transaction data. The periodic profile reports comprise content selected from the group consisting of: a daily transaction recap, a periodic transaction recap summary, a periodic consumer retention analysis, a periodic consumer activity



analysis, a periodic consumer ranking analysis, a periodic most active zip code analysis, a periodic consumer lifestyle analysis, a periodic activity usage analysis, a periodic consumer activity report, and combinations thereof.

According to the present invention, the host memory 38 stores consumer specific transaction information so as to enable generation of periodic consumer statements or to enable selection of a set of target consumers based upon a correlation of the consumer specific transaction information and the consumer specific survey information. The set of target consumers comprises a target set selected from the group consisting of: consumers who have been active with a specific merchant, consumers who have been inactive with a specific merchant, consumers present in a specific geographical area or zip code area, consumers generating activity or sales greater than a target amount, consumers generating activity or sales less than a target amount, consumers indicative of specific consumer demographics, consumers indicative of a specific gender, consumers indicative of a specific age, and combinations and permutations thereof. The host memory 38 further stores clerk specific transaction information in the transaction data storage 46 so as to enable generation of periodic clerk activity reports.

According to one embodiment of the present invention, the purchasing value accumulation system 10 operates as a consumer purchase tracking system. Specifically, the transaction terminal 12 is programmed to send, and the system host 14 is programmed to receive and store, transaction specific data indicative of the identity of the merchant at which the transaction is processed or executed, the identity of the consumer executing the purchase transaction, and a specific

product or service identifier, e.g. a UPC code, corresponding to each product or service purchased. To facilitate recognition of the specific product or service identifiers, the system host 14 may include a storage device within the host memory 38 dedicated to storing specific product or service identifiers and the corresponding product or service names. In this manner, information generated by the system host 14 and provided to interested parties can include the specific product or service identifiers and the corresponding product or service names. Alternatively, it is contemplated by the present invention that product or service names need not be stored on the system host 14 if a particular interested party has the ability to translate the specific product or service identifier into the corresponding product or service name.

The information generated by the system host 14 as a result of the above-described consumer purchase tracking operation may comprise: (i) a correlation of specific product purchases to point-of-sale purchase locations, individual consumers, or specific retailers; (ii) a correlation of specific consumer to specific retailers or specific point of sale locations; and (iii) combinations and permutations thereof. The information so generated may be made exclusively available to merchants or retailers utilizing the purchasing value accumulation system 10 or made be made available to any interested parties.

Funding rates used in the funding value calculation are stored in the funding rate storage 42 of the host memory 38. The funding rate storage structure enables selection of transaction specific funding rates. For example, a funding rate for computing the resulting transaction funding value may be a function of the transaction value, accumulated transaction values.

attributable to a single consumer identifier, or a marketing code assigned to a single consumer identifier. Marketing codes may be established according to consumer specific survey information gathered through use of the

5 instant issue form 70 or otherwise and may indicate a ranking of consumers relative to perceived importance to a merchant. Each authorized consumer is preferably identifiable by one or more marketing codes. The host memory 38 may be continuously reprogrammed to

10 incorporate changed funding rates and marketing codes.

The authorized point of sale transaction terminal is operative to suspend a set of normal mode operations and enter a setup mode wherein are performed setup functions selected from the group consisting of: host

15 setup, key setup, printer setup, auto close setup, training mode setup, date and time setup, account ranges setup, dial type setup, fraud control setup, debit cash-back setup, clerk identification setup, server identification setup, tip aid setup, and combinations

20 thereof. Further, the POS redeemable purchasing value accumulation system 10 is operative to require input of a transaction password prior to performing a password protected transaction. Additionally, the POS redeemable purchasing value accumulation system 10 is operative to

25 permit an operation selected from the group consisting of: providing a recommended tip amount based upon the transaction value, recording a tip amount in addition to the transaction value, opening a customer tab, closing a customer tab, deleting a customer tab, reprinting a

30 receipt, recalling a response, performing an authorized point of sale transaction terminal memory available check, and combinations thereof. Also, the POS redeemable purchasing value accumulation system 10 is

operative to permit an operation selected from the group

35 consisting of: displaying, printing, transmitting, and

deleting a batch of transactions stored in the authorized point of sale transaction terminal.

Referring now to Figs. 9 and 10, a purchasing value banking system (PVBS) 100 is illustrated. The PVBS 100 includes a PVBS host 102, a bank host 104, and a merchant system 105. The merchant system 105 typically includes a merchant host 106, at least one merchant terminal 116, and a merchant deposit drawer 120, but may merely include a single merchant terminal 116 in direct communication with the PVBS host 102. Each host 102, 104, 106 is controlled by a respective host controller (not shown), as described above with reference to the system host 14. Further, each host 102, 104, 106 includes data storage devices (not shown), e.g. digital memories, as described above with reference to the system host 14.

The PVBS host 102 is in communication with the merchant system 105 and the bank host 104. The PVBS host 102 is operative to process purchase value account information as a function of an expenditure transaction executed at the merchant terminal 116. It is contemplated by the present invention that a purchase value account, and the information processed in relation to the purchase value account, comprise any of a variety of account types and associated information related to purchasing value, e.g., points, cash, merchandise, services, etc., accumulated or earned as a function of an expenditure transaction executed at a merchant terminal.

In one embodiment of the present invention, the PVBS host 102 and the accompanying purchase value account data storage device 108 are similar to the system host 14 and the redeemable purchase value account balance storage 44 described herein with reference to Figs. 1-8 in that they incorporate any one or all of the

features, components, and functions present in the system host 14. For the purposes of illustration, the purchase value account data storage device 108 is illustrated schematically in Fig. 9 and represents collectively the variety of storage devices necessary to perform the operations of the system host 14 and any further storage devices associated with the operation of the PVBS host 102, as described herein. The PVBS host 102 is additionally operative to communicate with the bank host 104 and includes peripheral devices 110. The nature of the communication between the bank host 104 and the PVBS host 102, as well as the nature of the peripheral devices 110, are described in detail herein with further reference to Fig. 9.

The bank host 104 is substantially similar to those used conventionally for handling communications between a bank and another remote data processing system, such as a credit card or bank card data processing system or a funds transfer system. The bank host 104 differs from the conventional bank host communication systems in that it is further operative to communicate directly with the PVBS host 102 and transmit an authorization number generated at an authorization number source 112 to the PVBS host 102. The bank host 104 incorporates a bank account data storage device 114 which stores data related to bank accounts held with the bank.

The merchant host 106, which may be integral with the merchant terminal 116, is operative to communicate with the PVBS host 102. As will be appreciated, the present invention contemplates a plurality of merchant terminals 116 being provided at various merchant locations and all communicating with the merchant host 106. Each merchant terminal 116 incorporates any one or all of the features, components, and functions present in the point of sale transaction terminal 12, described

in detail herein with reference to Figs. 1-4 and 7. The merchant terminals 116 are further operative to enable performance of a complete set of banking operations, via the PVBS host 102 and the bank host 104, upon

5 recognition of a valid uni card 118. The merchant host 106 is also operative to debit and credit the merchant deposit drawer 120, indicate an amount to be debited from or credited to the merchant deposit drawer 120, or both.

10 The uni card 118 is a card similar to the consumer identification card 60, shown in Fig. 5, in that it includes at least one purchase value account number 122 embedded or encoded therein. The purchase value account number 122 corresponds to an account held in the

15 purchase value account data storage device 108. Further, the uni card 118 includes at least one bank account number 124 embedded or encoded therein, wherein the bank account number 124 corresponds to an account held in the bank account data storage device 114. It is

20 contemplated by the present invention that an account number may be embedded or encoded on the uni card 118 in the form of a bar code, embossed numbers, a magnetic encoding, or any other available encoding means which permits machine reading or visual reading of the number.

25 The peripheral devices 110 include automated or non-automated devices and any service structures which enhance the operational characteristics of the PVBS host 102. For example, the peripheral devices 110 may enable access to a PVBS host web page or other automated

30 information interface, a purchase value personal financial information source, an automated audio response unit, or an automated or non-automated call center.

The purchasing value banking system (PVBS) 100 is

35 operative to perform the functions of the purchasing

value accumulation system 10 described above with reference to Figs. 1-8. Additionally, the PVBS 100 is operative to perform any one of a complete set of banking operations upon recognition of a valid uni card 118 at the merchant terminal 116. Specifically, when a consumer is present at the point of sale and presents a valid uni card 118, the purchase value account number 122 and the bank account number 124 embedded or encoded therein are read, identified, or designated. As a result a purchasing value is accumulated based on an expenditure transaction conducted at the point of sale. Further, because the valid card has been presented and the bank account number 124 has been identified, the consumer may also utilize the merchant terminal 116 to conduct any one of a complete set of banking operations with the bank host 104. It is contemplated by the present invention that the PVBS 100 may be structured such that a banking operation is permitted only where a purchase transaction has been initiated at the point of sale. Conversely, it is also contemplated by the present invention that the PVBS 100 may be structured such that a banking operation is permitted regardless of whether an expenditure transaction is performed at the point of sale.

In the illustrated embodiment, a valid uni card 118 is recognized by passing the user's system card through a card reading slot 130 on the merchant terminal 116 and requiring input of a personal security code or password at the merchant terminal 116. It is contemplated by the present invention that a variety of automated and non-automated schemes may be employed to recognize a valid uni card 118. It is further contemplated by the present invention that entry of a personal security code during the valid card recognition sequence is not a required feature of the invention. Rather, entry of the security

code may be required only where one of the banking operations is to be performed, or may not be required at all.

Referring again to Fig. 9, the manner in which one of the banking operations is performed will be described in detail. Upon recognition of a valid uni card 118, the merchant terminal 116, via terminal display 132, prompts the consumer to specify whether a specific banking operation is to be performed. Alternatively, the consumer may be required to indicate, absent a terminal prompt, whether a banking operation is to be performed. If a banking operation is to be performed, the consumer selects a specific banking operation utilizing a banking operation interface comprising keys F1, F2, F3, F4 in a manner substantially similar to the procedures executed at conventional automatic teller machines. The PVBS host 102 then transfers the necessary information corresponding to the selected banking operation from the merchant system 105 to the bank host 104 and, if predetermined security clearance procedures for the selected banking operation are satisfied, a banking operation authorization signal and banking operation data associated with the selected banking operation is transferred from the bank host 104 to the merchant system 105 via the PVBS host 102.

As an illustrative example, where the consumer wishes to process a check cashing transaction via the merchant terminal 116, the transaction data is transmitted from the merchant host 106 to the bank host 104 via the PVBS host 102. In response to the request for cashing a check at the point of sale, the bank host 104 initiates a predetermined security clearance procedure according to usual banking industry business practices. If the security clearance procedure indicates that the check cashing transaction is



authorized, the bank host 104 generates an authorization number at an authorization number source 112 and transmits the authorization number to the merchant terminal 116 via the PVBS host 102. The authorization number is subsequently matched with the check to be cashed to facilitate periodic settlement between the merchant and the bank. In a preferred embodiment of the present invention, the authorization number, when matched with the check to be cashed, creates a bank guaranteed check and effectively eliminates any risk the merchant would have assumed by cashing a non-guaranteed check. It is contemplated by the present invention that the authorization number may be matched with the check to be cashed in an automated fashion, for example, through the use of a direct printing or encoding method whereby the authorization number is linked to the check to be cashed, or in a non-automated fashion, for example, where an attendant at the point of sale writes the authorization number on the check to be cashed.

Communications substantially identical to those described in the check cashing procedure are executed where the consumer wishes to process a withdrawal, deposit, or other banking transaction. It is contemplated by the present invention that the complete set of banking transactions includes but is not limited to a deposit, a withdrawal, a funds transfer, a loan payment, a utility payment, a statement request, a request for a printed transaction history, a personal identification number change transaction, a credit card cash advance transaction, a postage stamp purchase, a traveler's check purchase, any other transaction performed at a conventional automatic teller machine, and combinations thereof.

It is contemplated by the present invention that transaction data corresponding to any of the banking

operations may be sent directly to the bank host 104 from the merchant host 106, particularly where no expenditure transaction has been conducted at the point of sale. Alternatively, the PVBS host 102 may provide communication between the bank host 104 and the merchant host 106, providing the opportunity for an assessment of a service charge for such communications.

The merchant terminal 116 illustrated in Fig. 10 is substantially the same as the transaction terminal 112 illustrated in Fig. 4, with the exceptions that the merchant terminal 116 of Fig. 10 includes the banking operation interface keys F1, F2, F3, F4 and a conventional "CANCEL" key for enabling the specific banking operations described above, and a "BONUS" key for enabling special promotional operations linked with specific consumers, merchants, retailers, products, purchases, or services. For example, where a predetermined type of expenditure transaction occurs and is recognized at the point of sale, the "BONUS" key is depressed in succession with a set of numerical keys to create a bonus code. The bonus code is transmitted to the PVBS host 102 to indicate a particular type of bonus transaction. The PVBS host 102 executes a predetermined promotional operation in response to the bonus code.

For example, the steps of a bonus transaction may be as follows: (i) consumer purchases a particular product, e.g. Hawaiian Punch®; (ii) point of sale attendant recognizes the purchase as one of a plurality of predetermined bonus transactions and depresses the "BONUS" key followed by the numerical keys "2-3-8"; (iii) the bonus code "2-3-8", which corresponds to any Hawaiian Punch® purchase, is transmitted to the PVBS host 102; and (iv) the PVBS host 102 matches the bonus code "2-3-8" with a predetermined promotional operation stored in its data storage device and executes the

predetermined promotional operation. It will also be appreciated that a merchant terminal that is integrated with a cash register and bar code scanner provides the opportunity for automated bonus transactions.

5       The predetermined promotional operation executed by the PVBS host 102 may comprise any of a variety of operations including: an immediate credit to the consumer's purchase value account; a transmission of a  
10       laudatory message recognizing the bonus transaction to the merchant terminal 116 and consumer; and any other appropriate promotional operation. Further, it is contemplated by the present invention that execution of the promotional operation may be delayed until a  
15       predetermined number of specific bonus transactions have been initiated by the consumer. According to one aspect of the present invention, the promotional operation is not executed until the particular consumer has initiated particular bonus transactions exceeding a predetermined  
20       monetary value over a predetermined period of time. Printed messages monitoring the consumer's progress towards achieving execution of the promotional operation may be transmitted to the merchant host 106 and printed on the consumer's receipt.

      It is contemplated by the present invention that  
25       the "BONUS" key may be eliminated by a fully automated process whereby the PVBS host 102 is programmed to automatically recognize a specific transaction as a bonus transaction. The bonus operation would then be executed in the manner described above. Further, a  
30       message indicating that a bonus transaction has occurred and summarizing the bonus transaction can be transmitted to the merchant host 106 and printed on the transaction receipt.

      According to another aspect of the present  
35       invention, the PVBS host 102 is programmed to transmit a

free form text message to the merchant host 106 and the merchant terminal 116 is operative to reproduce the free form text message on the transaction receipt. The PVBS host 102 is programmed such that the particular free form text message transmitted to the merchant host 106 is either a standard message printed for every transaction or a message which is selected and generated as a function of the characteristics of the specific transaction, the specific merchant, or the specific consumer.

Having described the invention in detail and by reference to preferred embodiments thereof, it will be apparent that modifications and variations are possible without departing from the scope of the invention defined in the appended claims.

What is claimed is:

## CLAIMS

1. A purchasing value banking system comprising:
  - (a) a merchant system incorporating a merchant terminal, said merchant terminal comprising
    - 5 (i) a consumer data recording member operative to identify and transmit a purchase value account number and a bank account number, and
    - (ii) a banking operation interface;
  - 10 (b) a bank host incorporating a bank account data storage device; and
  - (c) a purchasing value banking system host in communication with said merchant system and in communication with said bank host, said system host  
15 being operative to
    - (i) receive said purchase value account number and said bank account number
    - (ii) process purchase value account  
20 information as a function of an expenditure transaction executed at said merchant terminal,
    - (iii) transfer banking operation information and said bank account number from said merchant system to said bank host in  
25 response to a banking operation selected at said banking operation interface, and
    - (iv) transfer a banking operation authorization signal from said bank host to said merchant system.
- 30 2. A purchasing value banking system as claimed in claim 1 wherein said banking operation interface comprises a keypad.

3. A purchasing value banking system as claimed in claim 1 wherein said banking operation interface is operative to permit performance of a banking operation selected from the group consisting of: a deposit, a withdrawal, a funds transfer, a loan payment, a utility payment, a statement request, a request for a printed transaction history, a personal identification number change transaction, a credit card cash advance transaction, a postage stamp purchase, a traveler's check purchase, any other transaction performed at a conventional automatic teller machine, and combinations thereof.
4. A purchasing value banking system as claimed in claim 1 wherein said bank account number is stored in said bank account data storage device, wherein said bank account number corresponds to a specific bank account, and wherein said banking operation interface is operative to enable deposit and withdrawal of funds from said specific bank account via said purchasing value banking system host and said bank host.
5. A purchasing value banking system as claimed in claim 1 wherein said selected banking operation comprises a check cashing transaction and wherein said authorization signal corresponds to an authorization number.
6. A purchasing value banking system as claimed in claim 5 wherein said merchant terminal is operative to reproduce said authorization number on a check.

7. A purchasing value banking system as claimed in claim 1 wherein said merchant system further incorporates a merchant host in communication with said merchant terminal and in communication with at least one additional merchant terminal.

8. A purchasing value banking system as claimed in claim 1 wherein said bank host further incorporates an authorization number source.

9. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host is further operative to transfer banking operation data from said bank host to said merchant system.

10. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host incorporates a purchase value account data storage device.

11. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host includes a device enabling access to an automated information interface.

12. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host includes a device enabling access to personal financial information.

13. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host includes an automated audio response unit.

14. A purchasing value banking system as claimed in claim 1 wherein said purchasing value banking system host includes a call center.
- 5 15. A purchasing value banking system as claimed in claim 1 wherein said purchase value account information corresponds to a value accumulated as a function of an expenditure transaction executed at a merchant terminal.
- 10 16. A method of executing a banking operation comprising the steps of:
- identifying a purchase value account number and a bank account number at a merchant terminal;
  - transmitting said purchase value account number and
  - 15 said bank account number to a purchasing value banking system host in communication with said merchant terminal;
  - processing purchase value account information at said purchasing value banking system host as a function
  - 20 of an expenditure transaction executed at said merchant terminal;
  - selecting at least one banking operation at a banking operation interface incorporated in said merchant terminal;
  - 25 transferring information corresponding to said selected banking operation from said merchant terminal to said bank host; and,
  - transferring a banking operation authorization signal from said bank host to said merchant system.
- 30 17. A method of executing a banking operation as claimed in claim 16 wherein banking operation data associated with said selected banking operation is transferred from said bank host to said merchant system.



18. A method of executing a banking operation as claimed in claim 16 wherein said purchase value account number and said bank account number are encoded on a card and are identified by reading said account numbers at said merchant terminal.
19. A method of executing a banking operation as claimed in claim 16 wherein said processing step includes the step of accumulating a value as a function of said expenditure transaction.
20. A merchant terminal operative to:
- identify a purchase value account number and a bank account number;
  - transmit said purchase value account number and said bank account number to a purchasing value banking system host in communication with said merchant terminal;
  - transmit expenditure transaction data to said purchasing value banking system host, wherein said expenditure transaction data corresponds to an expenditure transaction executed at said merchant terminal;
  - permit selection of at least one banking operation at a banking operation interface incorporated in said merchant terminal;
  - transmit information corresponding to a selected banking operation to said purchasing value banking system host; and
  - receive a banking operation authorization signal from said bank host.

21. A merchant terminal as claimed in claim 20 wherein said merchant terminal is further operative to initiate selective deposit and withdrawal of funds from a specific bank account.

5

22. A point of sale redeemable purchasing value accumulation system comprising:

an authorized point of sale transaction terminal including a terminal display, a transaction record  
10 printer, a consumer data recording member responsive to a consumer identifier, a transaction terminal identifier, a transaction value recording member, a redemption value recording member, and a transaction terminal data input/output port;

15 a host memory located remote from said authorized point of sale transaction terminal; and

a host controller located remote from and in communication with said authorized point of sale transaction terminal and operative to

20 calculate a transaction credit value based upon a credit rate stored in said host memory and based upon a transaction value input at said authorized point of sale transaction terminal,

25 increase an account balance in a redeemable account designated by said consumer data recording member based upon said transaction credit value,

30 decrease said account balance in said redeemable account based upon a redemption value input at said authorized point of sale transaction terminal, and

35 send transaction data and redeemable account balance data to said authorized point of sale transaction terminal.

23. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein a cash register is integrated with said authorized point of sale transaction terminal.

5

24. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host controller communicates with said authorized point of sale transaction terminal via a merchant host, and  
10 wherein said merchant host is in communication with a plurality of authorized point of sale transaction terminals.

25. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said  
15 consumer data recording member comprises a card reader and wherein said consumer identifier is stored on a consumer identification card.

20 26. A point of sale redeemable purchasing value accumulation system as claimed in claim 25 wherein said point of sale redeemable purchasing value accumulation system is operative to initiate a card number and expiration date verification sequence.

25

27. A point of sale redeemable purchasing value accumulation system as claimed in claim 25 wherein said  
consumer identification card is operative as one of a credit card, a debit card, a cash/check card, or  
30 combinations thereof.

28. A point of sale redeemable purchasing value accumulation system as claimed in claim 25 wherein said consumer identification card carries a plurality of consumer identifiers and wherein one of said host  
5 controller and said transaction terminal is operative to prompt a consumer to select one of said plurality of consumer identifiers.

29. A point of sale redeemable purchasing value  
10 accumulation system as claimed in claim 25 wherein said consumer identification card carries a consumer identifier representing a pooled redeemable account.

30. A point of sale redeemable purchasing value  
15 accumulation system as claimed in claim 27 further comprising a cash register integrated with said authorized point of sale transaction terminal wherein said cash register and said transaction terminal are  
operative to read said consumer identifier and conduct a  
20 credit, debit, and/or cash/check card transaction.

31. A point of sale redeemable purchasing value accumulation system as claimed in claim 25 wherein said consumer identification card is operative as a pre-paid  
25 redeemable purchasing value card and wherein said account balance in said redeemable account corresponds to a pre-paid redeemable purchasing value of said pre-paid redeemable purchasing value card.

32. A point of sale redeemable purchasing value  
30 accumulation system as claimed in claim 25 wherein said consumer identification card comprises an instant issue card issued at said authorized point of sale transaction terminal.

33. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said consumer identifier is stored on a system credit card and wherein said host controller is further operative to  
5 calculate an additional transaction credit value based upon an additional credit rate stored in said host memory and based upon a payment amount processed through said system credit card.
- 10 34. A point of sale redeemable purchasing value accumulation system as claimed in claim 33 wherein accumulation of said additional transaction credit value is limited to a predetermined minimum expenditure.
- 15 35. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host memory stores transaction information so as to enable generation of periodic point of sale transaction reports.
- 20 36. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host memory stores consumer specific transaction information and consumer specific survey information so  
25 as to enable generation of periodic profile reports.

37. A point of sale redeemable purchasing value accumulation system as claimed in claim 36 wherein said periodic profile reports comprise content selected from the group consisting of a daily transaction recap, a  
5 periodic transaction recap summary, a periodic consumer retention analysis, a periodic consumer activity analysis, a periodic consumer ranking analysis, a periodic most active zip code analysis, a periodic consumer lifestyle analysis, a periodic activity usage  
10 analysis, a periodic consumer activity report, and combinations thereof.

38. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said  
15 host memory stores consumer specific transaction information so as to enable generation of periodic consumer statements.

39. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said  
20 host memory stores consumer specific transaction information and consumer specific survey information so as to enable selection of a set of target consumers.

40. A point of sale redeemable purchasing value accumulation system as claimed in claim 39 wherein said set of target consumers comprises a target set selected from the group consisting of consumers who have been  
5 active with a specific merchant, consumers who have been inactive with a specific merchant, consumers present in a specific geographical area or zip code area, consumers generating activity or sales greater than a target amount, consumers generating activity or sales less than  
10 a target amount, consumers indicative of specific consumer demographics, consumers indicative of a specific gender, consumers indicative of a specific age, and combinations thereof.

15 41. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host memory stores clerk specific transaction information so as to enable generation of periodic clerk activity reports.

20 42. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said credit rate stored in said host memory is a function of said transaction value.

25 43. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said credit rate stored in said host memory is a function of accumulated transaction values attributable to said  
30 consumer identifier.

44. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said credit rate stored in said host memory is a function of  
35 a marketing code assigned to said consumer identifier.

45. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host controller is further operative to decrease said account balance in said redeemable account based upon a transaction cancellation or a merchandise return.

46. A point of sale redeemable purchasing value accumulation system as claimed in claim 45 wherein when said transaction cancellation or said merchandise return yields a negative account balance, said host controller is further operative to charge a consumer system credit account in an amount corresponding to the negative balance.

47. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host controller is further operative to block input of said redemption value when a redemption blocked consumer identifier is detected by said consumer data recording member.

48. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said host controller is further operative to activate and inactivate a redemption block function wherein input of said redemption value is blocked when a specific consumer identifier is detected by said consumer data recording member.



49. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein access to said redeemable account is limited to transactions including an expenditure or return  
5 transaction processed at any one of a plurality of point of sale transaction terminals in communication with said host controller.

50. A point of sale redeemable purchasing value  
10 accumulation system as claimed in claim 22 wherein access to said account balance is limited to transactions including an expenditure or return transaction processed at any one of a plurality of point of sale transaction terminals in communication with said  
15 host controller.

51. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 further comprising a plurality of authorized point of sale  
20 transaction terminals in communication with said host controller wherein said host controller is operative to:  
calculate a terminal specific transaction credit value based upon one of a plurality of host programmed credit rates stored in said host memory and based upon a  
25 terminal transaction value input at a selected one of said plurality of authorized point of sale transaction terminals;

increase an account balance in a redeemable account designated by a consumer data recording member  
30 associated with said selected one of said plurality of authorized point of sale transaction terminals based upon said terminal specific transaction credit value;  
decrease said account balance in said designated redeemable account based upon a redemption value input

at said selected one of said plurality of authorized point of sale transaction terminals; and

send terminal specific transaction data and redeemable account balance data to said selected one of  
5 said plurality of authorized point of sale transaction terminals.

52. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said  
10 authorized point of sale transaction terminal is operative to suspend a set of normal mode operations and enter a setup mode wherein are performed setup functions selected from the group consisting of host setup, key  
15 setup, printer setup, auto close setup, training mode setup, date and time setup, account ranges setup, dial type setup, fraud control setup, debit cash-back setup, clerk identification setup, server identification setup, tip aid setup, and combinations thereof.

20 53. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said point of sale redeemable purchasing value accumulation system is operative to require input of a transaction password prior to performing a password protected  
25 transaction.

54. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said  
30 point of sale redeemable purchasing value accumulation system is operative to permit an operation selected from the group consisting of providing a recommended tip amount based upon said transaction value, recording a tip amount in addition to said transaction value, opening a customer tab, closing a customer tab, deleting  
35 a customer tab, reprinting a receipt, recalling a

response, performing an authorized point of sale transaction terminal memory available check, and combinations thereof.

5 55. A point of sale redeemable purchasing value accumulation system as claimed in claim 22 wherein said point of sale redeemable purchasing value accumulation  
10 system is operative to permit an operation selected from the group consisting of: displaying, printing, transmitting, and deleting a batch of transactions stored in said authorized point of sale transaction terminal.

15 56. A neutrally-branded, multi-merchant, frequent shopper system integrated with a consumer point of sale at a plurality of participating merchants and covering all forms of payment comprising:

a consumer redeemable account established for at least one participating consumer;  
20 an authorized point of sale transaction terminal located at a selected participating merchant and including a total expenditure value recording member and a redemption value recording member, wherein said redemption value recording member is operative to record  
25 a redemption value;

a net expenditure value determining member responsive to said total expenditure value and said redemption value; and

30 a host controller located remote from and in communication with said authorized point of sale transaction terminal and operative to

determine a credit value associated with an expenditure transaction processed at said authorized point of sale transaction terminal,  
35 said credit value being a function of a credit

rate stored at a location remote from said selected participating merchant and a function of one of said net expenditure value or said total expenditure value;

5           increase said balance in said consumer redeemable account in accordance with said credit value;

          decrease said balance in said consumer redeemable account in accordance with said redemption value; and

10

          issue a transaction receipt indicating said total expenditure value, said redemption value, said net expenditure value, said credit value, and said balance.

15

57. A method of accumulating redeemable purchasing value based upon a point of sale transaction comprising the steps of:

          designating a redeemable account at an authorized point of sale transaction terminal;

20

          transmitting a designated redeemable account identifier and a transaction value input at said authorized point of sale transaction terminal to a host located remote from said authorized point of sale transaction terminal;

25

          calculating a transaction credit value based upon a credit rate stored in a host memory located remote from said authorized point of sale transaction terminal and based upon said transaction value input at said authorized point of sale transaction terminal;

30

          increasing an account balance in said redeemable account based upon said transaction credit value;

          decreasing an account balance in said redeemable account based upon a redemption value input at said authorized point of sale transaction terminal; and

35

sending transaction data and redeemable account balance data from a host located remote from said authorized point of sale transaction terminal to said authorized point of sale transaction terminal.

5

58. A method of accumulating redeemable purchasing value based upon a point of sale transaction comprising:

designating a redeemable account at a selected one of a plurality of authorized point of sale transaction terminals;

transmitting a designated redeemable account identifier and a transaction value input at said selected authorized point of sale transaction terminal to a host located remote from said plurality of authorized point of sale transaction terminals;

calculating a transaction credit value based upon a credit rate stored in a host memory located remote from said plurality of authorized point of sale transaction terminals and based upon a transaction value input at said selected authorized point of sale transaction terminal;

increasing an account balance in said designated redeemable account based upon said transaction credit value;

decreasing an account balance in said redeemable account based upon a redemption value input at said selected authorized point of sale transaction terminal; and

sending transaction data and redeemable account balance data from a host located remote from said plurality of authorized point of sale transaction terminals to said selected authorized point of sale transaction terminal.

59. A method for implementing a neutrally-branded, multi-merchant, frequent shopper program integrated with the point of sale and covering all forms of payment comprising the steps of:

- 5 identifying a set of participating merchants;
- identifying at least one participating consumer;
- establishing a consumer redeemable account for said at least one participating consumer;
- determining a total expenditure value associated
- 10 with a participating consumer expenditure transaction at a selected participating merchant;
- determining a redemption value associated with said participating consumer expenditure transaction;
- determining a net expenditure value associated with
- 15 said participating consumer expenditure transaction, said net expenditure value being a function of said total expenditure value and said redemption value;
- determining a credit value associated with said participating consumer expenditure transaction, said
- 20 credit value being a function of a credit rate stored at a location remote from said selected participating merchant and a function of one of said net expenditure value or said total expenditure value;
- increasing said balance in said consumer redeemable
- 25 account in accordance with said credit value;
- decreasing said balance in said consumer redeemable account in accordance with said redemption value; and
- issuing a transaction receipt indicating said total expenditure value, said redemption value, said net
- 30 expenditure value, said credit value, and said balance.

60. A method for implementing a neutrally-branded, multi-merchant, frequent shopper program integrated with the points of sale and covering all forms of payment as claimed in claim 59 wherein said redemption value is less than or equal to a balance in said consumer redeemable account.

61. A method of accumulating redeemable purchasing value based upon a point of sale transaction comprising:

10       calculating a transaction credit value based upon a credit rate stored in a host memory located remote from a first and a second authorized point of sale transaction terminal and based upon a transaction value input at said first authorized point of sale transaction terminal;

15       producing an absolute credit value at said second authorized point of sale transaction terminal;

          increasing an account balance in a redeemable account designated at said first authorized point of sale transaction terminal based upon said transaction credit value;

20       increasing said account balance based upon said absolute credit value;

          decreasing an account balance in said redeemable account based upon a redemption value input at said authorized point of sale transaction terminal; and

25       sending transaction data and redeemable account balance data from a host located remote from said authorized point of sale transaction terminal to said authorized point of sale transaction terminal.

30

62. A method of accumulating redeemable purchasing value based upon a point of sale transaction as claimed in claim 61 wherein said absolute credit value corresponds to a value indicated on an authorized system coupon, a value indicated on an authorized system rebate, or a value indicated on an authorized system absolute credit.

63. A point of sale transaction terminal operative to:  
10 display and print transaction data;  
detect and transmit a consumer identifier;  
produce and transmit a transaction terminal identification signal;  
record and transmit a transaction value;  
15 record and transmit a redemption value; and  
communicate with a host controller located remote from said point of sale transaction terminal so as to receive said transaction data including a transaction credit value and an account balance in a redeemable  
20 account corresponding to said consumer identifier.

64. A point of sale redeemable purchasing value accumulation system comprising:  
a plurality of authorized point of sale transaction  
25 terminals, each of said terminals including a terminal display, a transaction record printer, a consumer data recording member, a transaction terminal identifier, a transaction value recording member, a redemption value recording member, and a transaction terminal data  
30 input/output port;  
a host memory located remote from said plurality of authorized point of sale transaction terminals; and  
a host controller located remote from and in communication with said plurality of authorized point of  
35 sale transaction terminals and operative to



calculate a transaction credit value  
based upon a credit rate stored in said host  
memory and a transaction value input at a  
selected one of said plurality of authorized  
point of sale transaction terminals,  
5       increase an account balance in a  
redeemable account designated by said consumer  
data recording member at said selected  
authorized point of sale transaction terminal  
10       based upon said transaction credit value,  
      decrease an account balance in said  
redeemable account based upon a redemption  
value input at said selected authorized point  
of sale transaction terminal, and  
15       send transaction data and redeemable  
account balance data to said selected  
authorized point of sale transaction terminal.

65. A point of sale redeemable purchasing value  
20   accumulation system comprising:  
      a first authorized point of sale transaction  
terminal including a terminal display, a transaction  
record printer, a consumer data recording member, a  
transaction terminal identifier, a transaction value  
25   recording member, a redemption value recording member,  
and a transaction terminal data input/output port;  
      a second authorized point of sale transaction  
terminal including a terminal display, a transaction  
record printer, a consumer data recording member, a  
30   transaction terminal identifier, an absolute credit  
value recording member, and a transaction terminal data  
input/output port;  
      a host memory located remote from said first and  
second authorized point of sale transaction terminals;  
35   and

a host controller located remote from and in communication with said first and second authorized point of sale transaction terminals and operative to

calculate a transaction credit value

5       based upon a credit rate stored in said host memory and based upon a transaction value input at said first authorized point of sale transaction terminal,

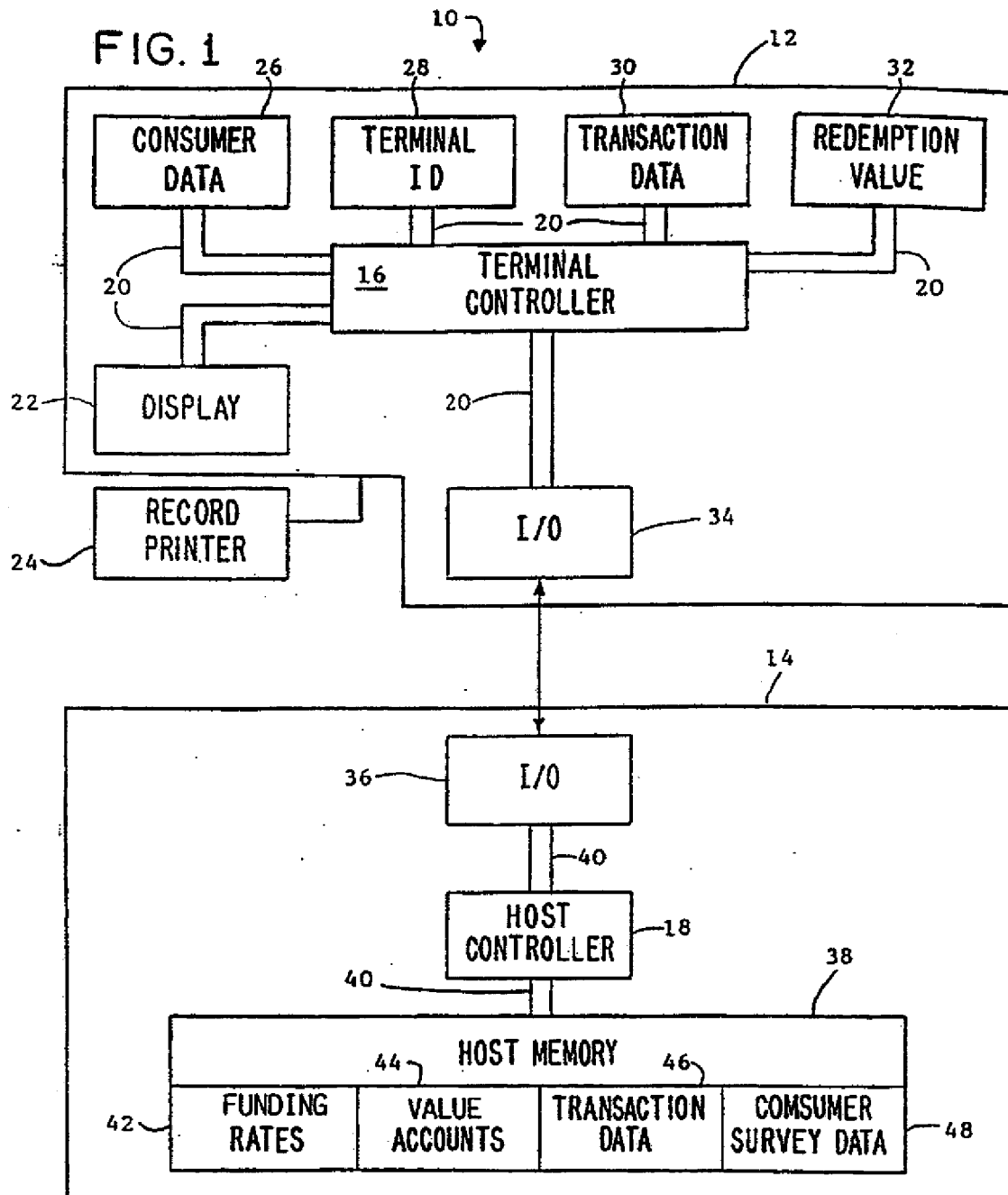
10       increase an account balance in a redeemable account designated by said consumer data recording member based upon said transaction credit value,

15       decrease said account balance in said redeemable account based upon a redemption value input at said first authorized point of sale transaction terminal,

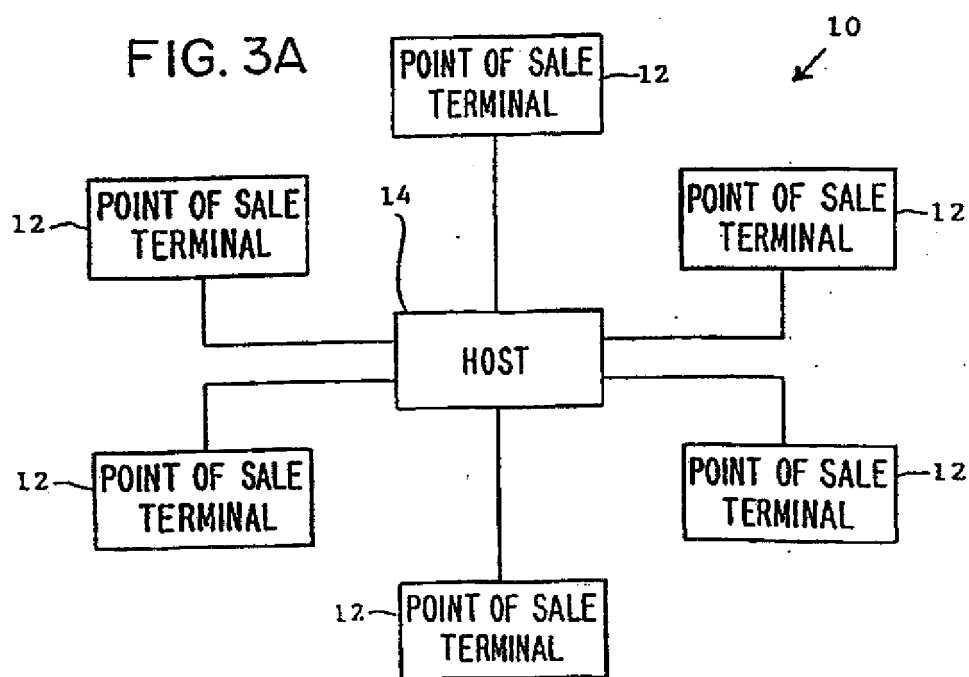
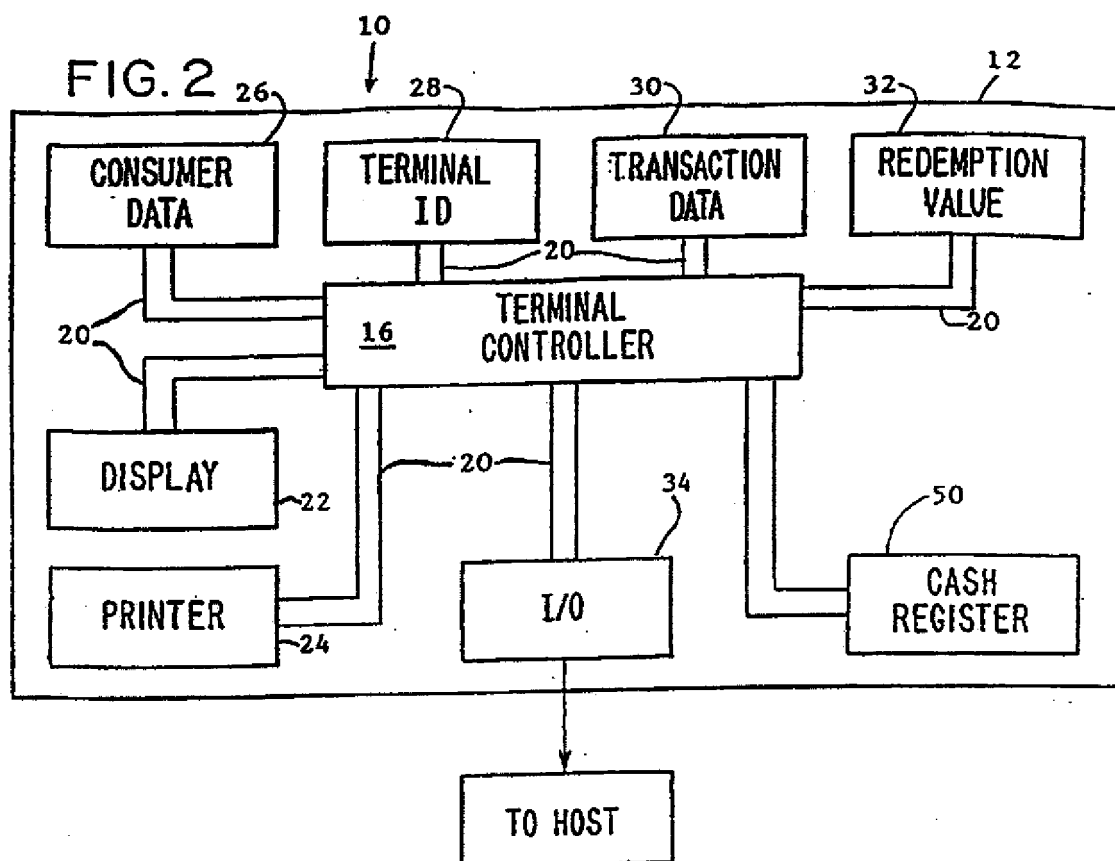
20       increase said account balance in said redeemable account based upon an absolute transaction credit value recorded by said absolute credit value recording member, and

send transaction and redeemable account balance data to said authorized point of sale transaction terminal.

1/9



2/9



3/9

FIG. 3B

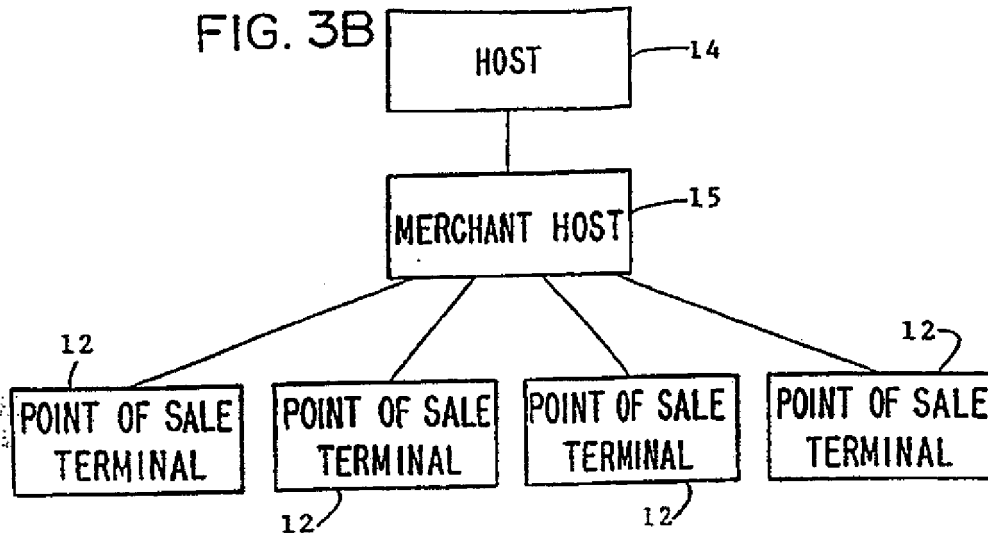


FIG. 4

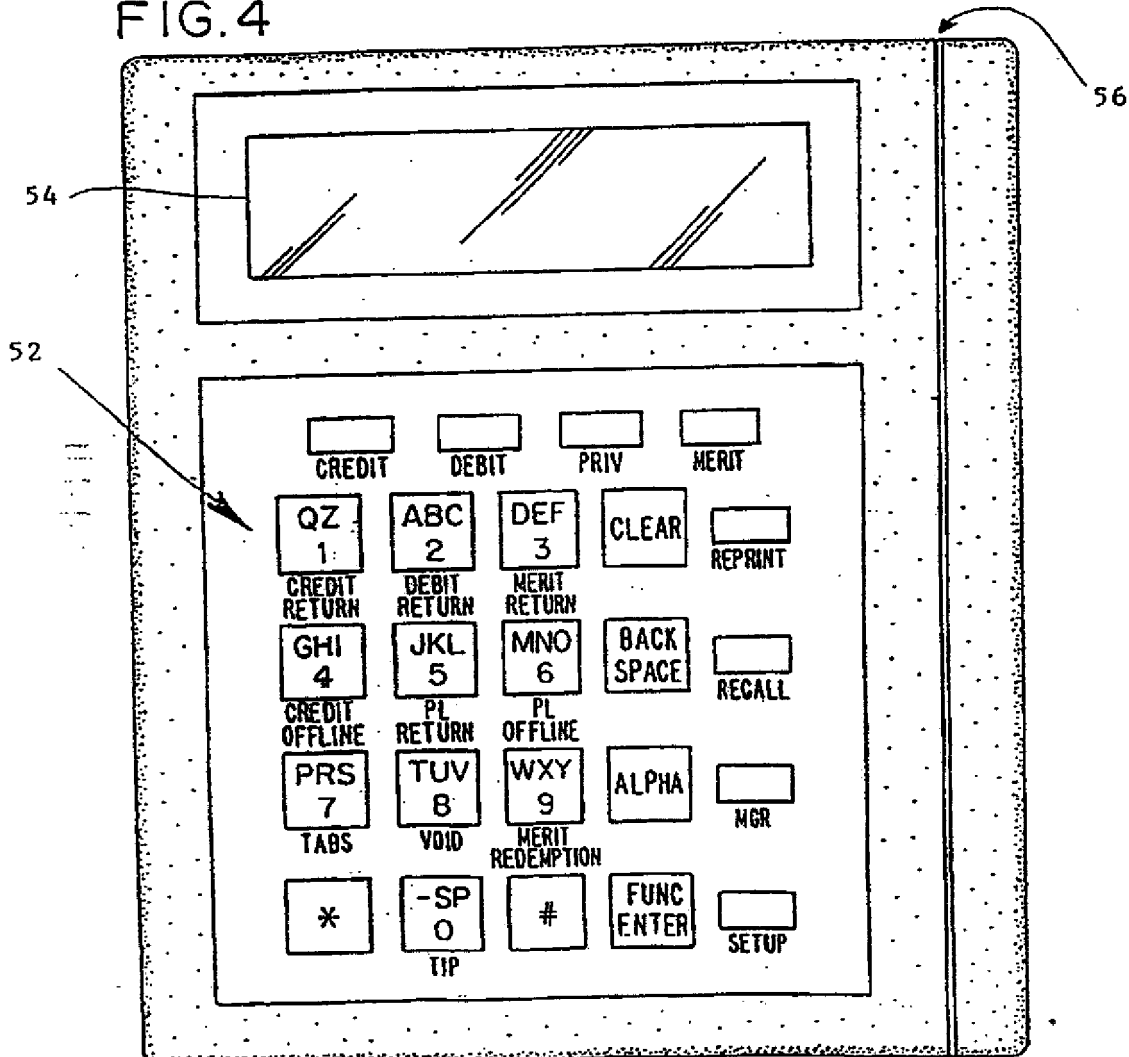


FIG. 5

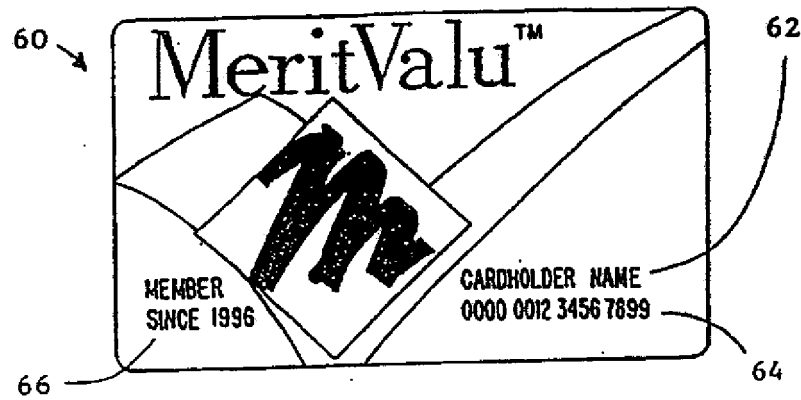


FIG. 6

70

76 72

MEMBERSHIP PROFILE

80

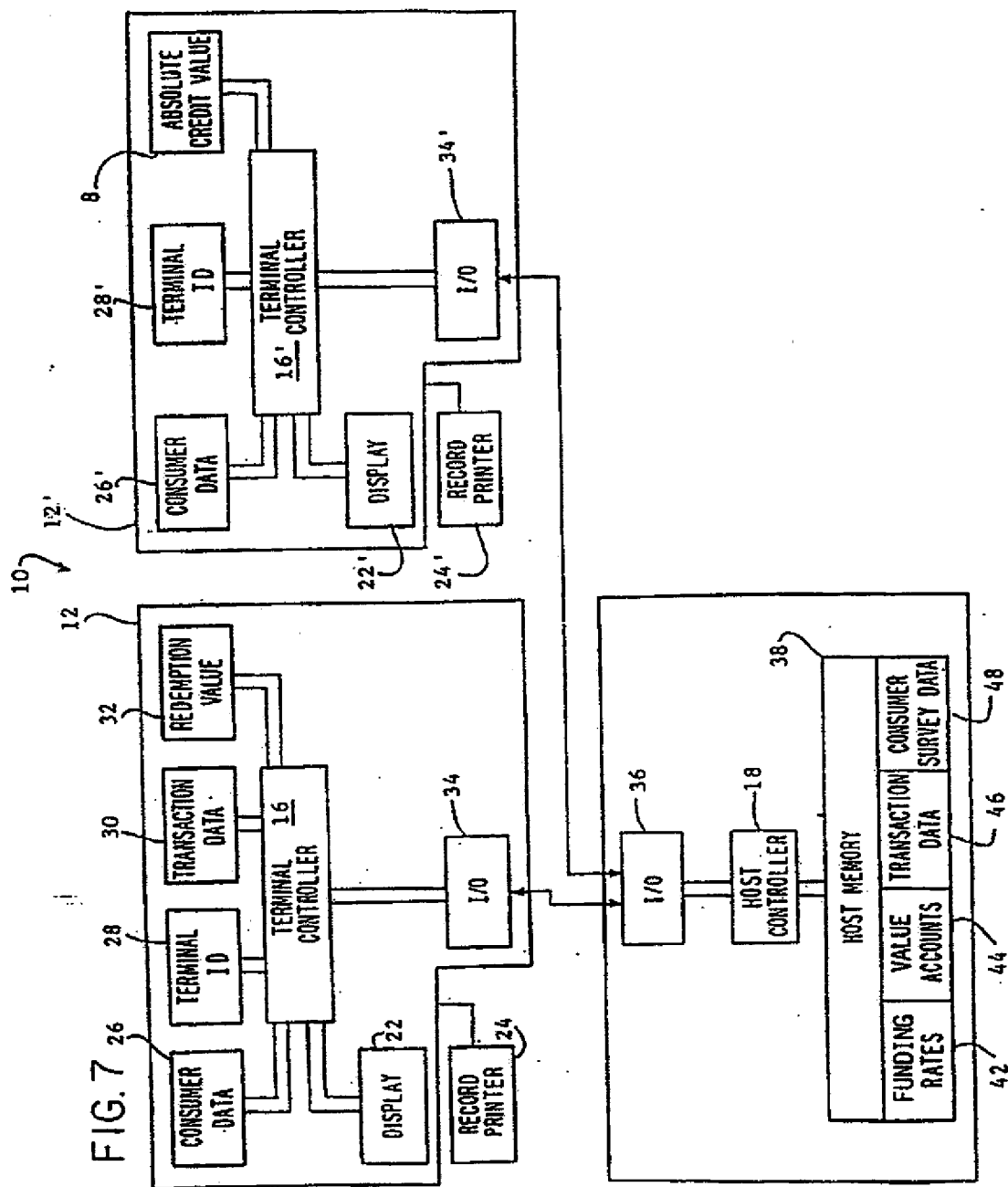
SURVEY INFO

78

74

MeritValu™

1996



6/9

FIG. 8A

TEST MERCHANT RESTAURANT TERMINAL	
MERCHANT ADDRESS	
CITY ST ZIP	
PHONE	
DATE: 05/14/96	TIME: 03:30 PM
ACCT# 00277	
CARD TYPE HERIT VALU	
TRAN TYPE HERITVALU	
TERMINAL # 12345002	
AUTH CODE APPROV	
RECORD # 004	
AMOUNT	\$13.82
HERITVALU	
HERITVALU MONEY:	
EARNED	\$0.69
CURRENT BALANCE	\$58.74
THANK YOU	
HAVE A NICE DAY	
PLEASE COME AGAIN	
TOP COPY-MERCHANT BOTTOM COPY-CUSTOMER	

FIG. 8B

TEST MERCHANT RESTAURANT TERMINAL	
MERCHANT ADDRESS	
CITY ST ZIP	
PHONE	
DATE: 05/14/96	TIME: 03:19 PM
ACCT# 00107	
CARD TYPE HERIT VALU	
TRAN TYPE HERITVALU	
TERMINAL # 12345002	
AUTH CODE APPROV	
RECORD # 002	
AMOUNT	\$45.75
REDEMPTION AMT	\$-25.00
AMOUNT DUE	\$20.75
X_____	
REDEMPTION	
HERITVALU MONEY:	
EARNED	\$1.04
REDEEMED	\$-25.00
CURRENT BALANCE	\$56.31
THANK YOU	
HAVE A NICE DAY	
PLEASE COME AGAIN	
TOP COPY-MERCHANT BOTTOM COPY-CUSTOMER	



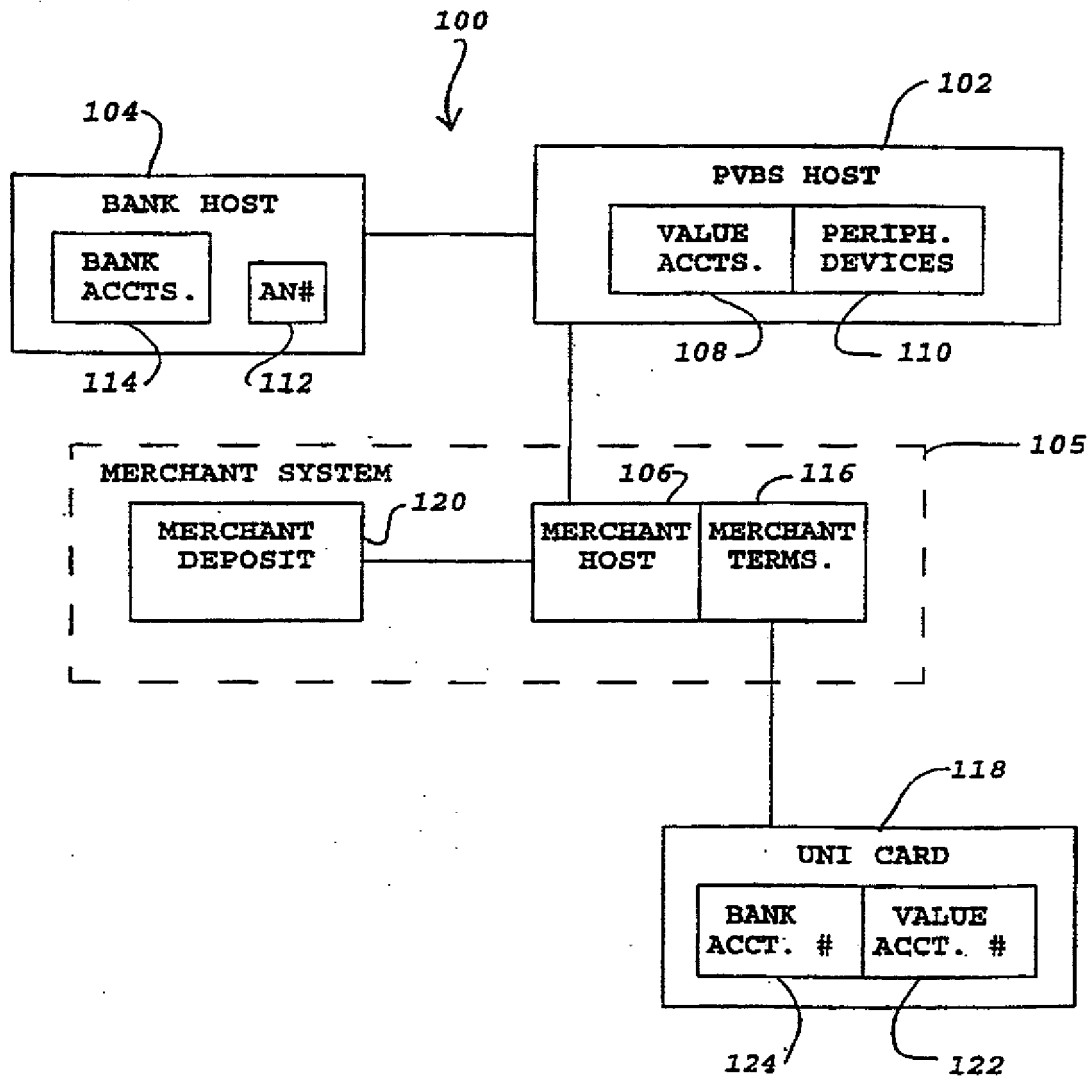


FIG. 9

8/9

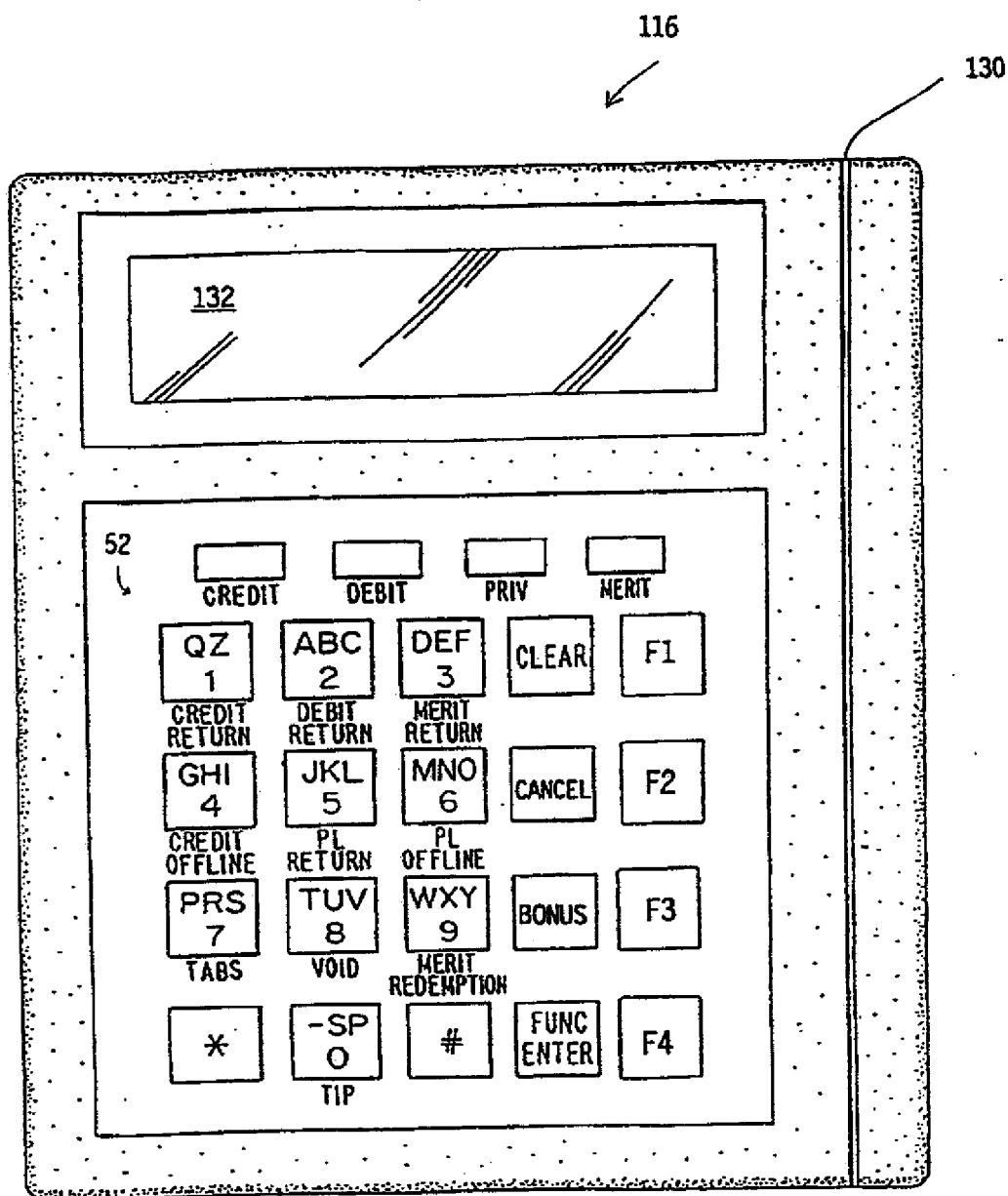
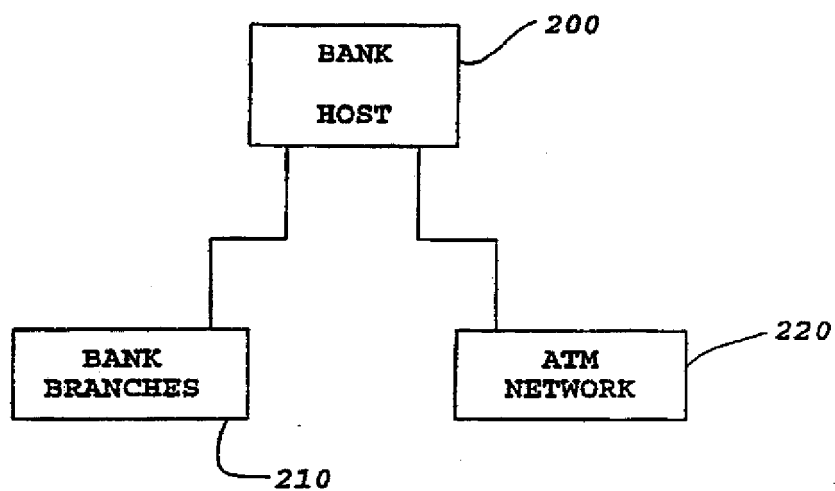


Fig. 10

*FIG. 11*

# INTERNATIONAL SEARCH REPORT

Int'l. Application No  
PCT/US 97/09085

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IP

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 287 268 A (MCCARTHY PATRICK D) 15 February 1994 cited in the application see abstract; figure 1 see column 1, line 35 - column 1, line 38 see column 5, line 40 - column 6, line 61 ---	1-65
X	ANONYMOUS: "Portable Self Checkout Retail System." IBM TECHNICAL DISCLOSURE BULLETIN, vol. 35, no. 1A, June 1992, NEW YORK, US, pages 315-318, XP000308880 see the whole document ---	1-65

-/--

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

24 October 1997

Date of mailing of the international search report

19. 11. 97

Name and mailing address of the ISA  
European Patent Office, P.O. 5518 Patentplan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 600 nl,  
Fax: (+31-70) 340-3018

Authorized officer

Gardiner, A

# INTERNATIONAL SEARCH REPORT

Int. J. Appl. Application No  
PCT/US 97/09085

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"Providing incentives with frequency programs (bankcard authorization)" CHAIN STORE AGE EXECUTIVE, OCT. 1993, USA, vol. 69, no. 10, pt.1, ISSN 0193-1199, pages 86-87, XP002044556 see page 87	1-65
A	--- US 5 455 407 A (ROSEN SHOLOM S) 3 October 1995 see column 3, line 40 - column 5, line 44; claims 1-9; figure 7	1-65
A	--- EP 0 711 434 A (CREDIT VERIFICATION CORP) 15 May 1996 see page 3, line 20 - line 25 see page 9, line 3 - line 28 see page 13, line 16 - page 14, line 6 -----	1-65

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. l. Application No

PCT/US 97/09085

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5287268 A	15-02-94	US 4941090 A	10-07-90
		US 5117355 A	26-05-92
		US 5202826 A	13-04-93
<hr/>			
US 5455407 A	03-10-95	US 5453601 A	26-09-95
		AU 679359 B	26-06-97
		AU 2013695 A	20-07-95
		AU 673304 B	31-10-96
		AU 2013795 A	20-07-95
		AU 679360 B	26-06-97
		AU 2013895 A	20-07-95
		AU 673305 B	31-10-96
		AU 2013995 A	20-07-95
		AU 658233 B	06-04-95
		AU 2739292 A	17-06-93
		CA 2080452 A	16-05-93
		CN 1073789 A	30-06-93
		DE 542298 T	16-12-93
		EP 0542298 A	19-05-93
		EP 0785515 A	23-07-97
		EP 0785516 A	23-07-97
		EP 0785517 A	23-07-97
		EP 0788066 A	06-08-97
		EP 0785518 A	23-07-97
		EP 0784282 A	16-07-97
		HU 65212 A	02-05-94
		IL 103397 A	18-06-96
		JP 6162059 A	10-06-94
		JP 7111723 B	29-11-95
		MX 9205890 A	01-06-93
		NZ 244903 A	28-10-96
		NZ 286668 A	28-10-96
		NZ 286669 A	28-10-96
		NZ 286670 A	28-10-96
		NZ 286671 A	28-10-96
		PL 300041 A	05-04-94
		SK 68593 A	05-03-97
		WO 9310503 A	27-05-93
		ZA 9208773 A	13-05-93

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 97/09085

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0711434 A	15-05-96	AU 7402294 A	20-02-95
		WO 9503570 A	02-02-95
		US 5644723 A	01-07-97
		US 5649114 A	15-07-97
		US 5642485 A	24-06-97
-----			

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



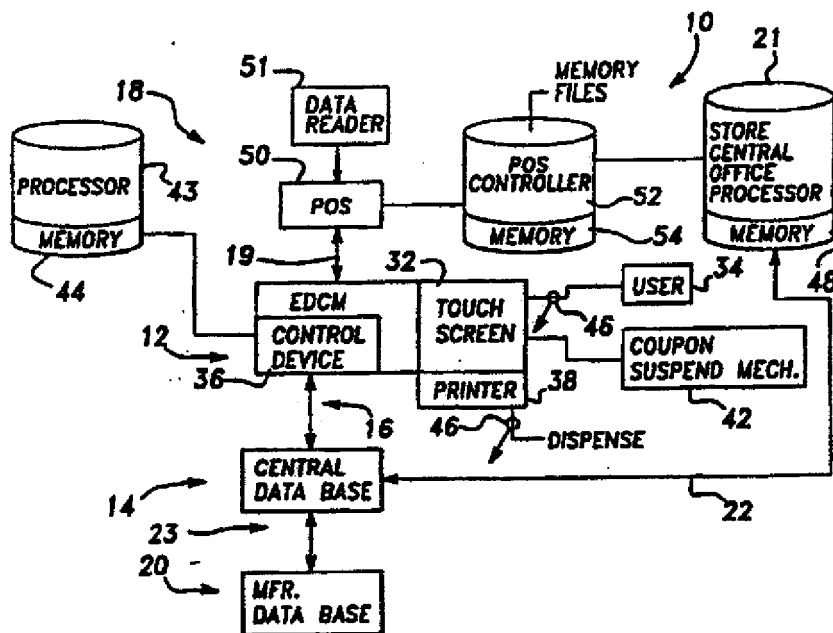
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: <b>G07F 7/00, 7/08</b>		A1	(11) International Publication Number: <b>WO 97/50064</b>
			(43) International Publication Date: 31 December 1997 (31.12.97)
(21) International Application Number: <b>PCT/US97/11129</b>		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 25 June 1997 (25.06.97)		Published With international search report.	
(30) Priority Data: 08/671,519 27 June 1996 (27.06.96) US			
(60) Parent Application or Grant (63) Related by Continuation US Filed on 08/671,519 (CON) 27 June 1996 (27.06.96)			
(71) Applicant (for all designated States except US): ELECTRONIC CONSUMER CONCEPTS, INC. [US/US]; Suite 100, 26222 Telegraph Road, Southfield, MI 48034-5347 (US).			
(72) Inventor; and (73) Inventor/Applicant (for US only): WEST, Jack, T. [US/US]; 30910 Morlock, Livonia, MI 48152 (US).			
(74) Agents: MILLER, H., Keith et al.; Hamess, Dickey & Pierce, P.L.C., P.O. Box 828, Bloomfield Hills, MI 48303 (US).			

(54) Title: ELECTRONIC COUPON DISPENSING SYSTEM

(57) Abstract

A cost-effective, in-store coupon dispensing system (10) that increases coupon redemption rates and product turns. The system includes a point-of-sale system (18) including a terminal (50) having a data reader (51) for reading transaction data, and a system memory for storing read transaction data (54). An electronic coupon dispenser (12) includes a memory (44) for electronically storing a plurality of coupons, one or more user interfaces (32) for permitting selection of any of the plurality of coupons from a coupon menu, and one or more printers (38) for printing coupons elected at the user interface. The coupon dispenser generates coupon-related data based on user interface selections and coupons printed by the system. A central data base facility (14) is operatively connected to the point-of-sale system (18) for downloading coupon redemption data (22) and to the electronic coupon dispenser (12) for downloading the coupon-related data (16). The central data base facility (14) communicates with the electronic coupon dispenser (12) in response to first predetermined parameters and with the point-of-sale system (18) in response to second predetermined parameters. The coupon dispensing system (10) of the present invention finds particular utility in grocery stores or other stores having inventory having limited shelf life.





**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SK	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SE	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MX	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## ELECTRONIC COUPON DISPENSING SYSTEM

### BACKGROUND OF THE INVENTION

#### 1. Technical Discussion.

The present invention relates generally to menu driven information retrieval systems, and more particularly to an in-store coupon dispensing system that generates and dispenses coupons based on consumer made menu selections, that transmits coupon-related data to a central data base for processing and dissemination, and that effectively targets in-store consumers.

#### 2. Discussion.

The number of coupons that are annually printed and distributed has increased steadily in recent years. For example, in 1994, over three hundred billion coupons were printed and distributed through magazines, newspapers and flyers, providing consumers with purchasing incentives and discounts on items ranging from food products to professional services. Distribution of coupons provides manufacturers with not only an effective way to generate consumer purchasing incentives, but also with alternate channels for advertising and creation of brand recognition.

Despite the number of coupons that are annually printed and distributed, historically only a small percentage, typically between two and five (2%-5%) percent, are actually redeemed. Several reasons are attributed to this low rate of redemption. First, because most coupons are distributed through magazines, newspapers and other distributed printed media, consumers typically discover the coupons at home, work or other areas remote from stores in which the coupons may be redeemed. Thus, the coupons do not typically generate impulse-based sales. Second, many consumers prefer not to deal with the inconvenience of clipping coupons and saving the coupons until the need for a particular product arises. If the consumer does not have a present need for a product, there is lack of incentive to save the coupon.

Conventional preprinted paper coupons are also inconvenient for stores for several reasons. First, coupons are printed months in advance, thereby giving stores and manufacturers no flexibility in providing consumer purchasing incentive for a particular product on a given day. Second, if a particular product is sold out in response to a coupon offering, the store typically must issue rainchecks for the product when supply does not equal demand. Third, preprinted paper coupons have a lengthy float period between coupon redemption and store reimbursement.

- 2 -

Typically, coupons must be manually collected from each individual store, counted and processed through processing facilities and clearing houses before a reimbursement amount is calculated and the manufacturer provides payment to the store. Ultimately, the cost of the float period and the associated processing is borne by both the manufacturer and the store.

Recently, an attempt has been made to dispense coupons at the point of sale based in part on consumer purchasing characteristics. Systems, such as the system created and marketed by the Catalina Marketing Corporation under the name of Checkout Coupon<sup>®</sup> and Checkout Direct<sup>®</sup>, and disclosed in U.S. Patent Nos. 4,723,212, 4,910,672, and 5,173,851, are integrated with, and generate coupons at, point of sale (POS) terminals in response to bar code data scanned in or manually entered from the product being purchased. The POS generated coupons provide purchasing consumers with incentive to purchase competitive brand products rather than consumer brands of choice.

However, systems such as the above system have associated limitations. First, coupons are generated in response to data collected from the product itself, and thus are not related to the present shopping needs of the consumer. Second, existing point of sale software must be significantly modified to accommodate such a system. Third, such a system provides no direct interaction between the retailer and the manufacturer. The retailer cannot respond to immediate store or manufacturer needs, as coupons are generated based on agreements between the product manufacturers and the service provider made well in advance of the coupon printing.

In view of the aforementioned, a need exists to provide a coupon dispensing system that generates and dispenses coupons based directly on immediate consumer wants and needs. In particular, there is a need for a coupon system that combines the benefits of preprinted paper coupons with the benefits of an in-store coupon generating system that tracks consumer coupon selection trends. There is a need for an in-store coupon generating system that can generate coupons with varying short-term expiration dates. In addition, there is a need to be able to limit the number of coupons dispensed, with an initial set number or in response to consumer demand. There is also a need to target dissemination of coupons to specific geographic areas, chains or stores. In addition, there is a need for a coupon dispensing system that

- 3 -

reduces the float period associated with store coupon reimbursement, thereby making the generation and dispensing of coupons a more profitable endeavor for both the retailer and the manufacturer. Further, there is a need for a coupon dispensing system that can respond on a same-day basis to changing inventory and/or consumer purchasing conditions or trends on an individual store or chain-wide basis. Finally, there is a need for a coupon dispensing system that is capable of downloading data from both a POS system and the coupon dispensing system to provide manufacturers with coupon redemption data with minimal associated programming changes to existing POS system software.

#### 10 BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of a stand-alone electronic coupon dispensing machine (ECDM) according to a preferred embodiment of the present invention;

Figure 2 is a block diagram of an electronic coupon dispensing system according to a preferred embodiment of the present invention;

15 Figures 3A-3E illustrate successive screens appearing in response to user selection on the ECDM of Figure 1;

Figure 4 illustrates a representative coupon generated by the ECDM of Figure 1;

20 Figure 5 is a flow diagram illustrating the methodology implemented by the ECDM of Figure 1;

Figure 6 is a flow diagram illustrating the methodology implemented by the ECDM of Figure 1 upon the ECDM entering a coupon suspend mode; and

25 Figure 7 is a flow diagram illustrating the communication methodology implemented for linking the components of the electronic coupon dispensing system of Figure 2.

#### SUMMARY OF THE INVENTION

In response to the foregoing needs, the present invention provides an in-store coupon dispensing system that dispenses coupons based on consumer made menu selections. The coupon dispensing system of the present invention provides the advertising and brand recognition of preprinted paper coupons, and appeals to the immediate needs of the in-store consumer, thereby increasing the likelihood of coupon

30

- 4 -

redemption. The coupon dispensing machine of the present invention generates coupons with any expiration date, e.g., daily, weekly, or monthly, based upon each advertiser's specific marketing needs. In addition, the coupon dispensing machine of the present invention can limit the number of coupons dispensed, based upon an initial number or consumer demand, as set by the advertiser. Also, coupons can be disseminated to any level, e.g., by geographic region, city, chain, store, or any defined set of stores within one or more geographic region, city or chain. In addition, the coupon dispensing system of the present invention collects data based on the number of coupons dispensed and redeemed for particular products, in addition to data relating to consumer-made menu selections. The coupon dispensing system of the present invention requires only minimal interfacing with existing store POS systems or store central office systems for capturing and downloading coupon redemption data in real-time or batch mode on a periodic basis to a central data base.

Further, the coupon dispensing system of the present invention permits a store to suspend dispensing of a particular coupon or coupons based on inventory status or other individual store conditions. The coupon dispensing system of the present invention also permits the store to respond quickly to everchanging consumer buying trends, in that a coupon for a particular product or products may be added to, or deleted or temporarily suspended from, the system menu through software-implemented changes on a same-day basis. By including a centrally located data base, the coupon dispensing system may gather coupon redemption data from the store or chain central office and transmit the data on-line or in batch mode to the manufacturer or retailer, thereby eliminating the need for the manual collection and clearing house counting procedures associated with conventional paper coupons.

In particular, the present invention provides an in-store coupon dispensing system that increases coupon redemption rates and product turns. The system includes a point of sale terminal including a data reader for reading transaction data, and a point of sale terminal memory for storing read transaction data. An electronic coupon dispensing machine includes a memory for electronically storing a plurality of coupons, one or more user interfaces for permitting selection of any of the plurality of coupons from a coupon menu, and one or more printers for printing coupons elected at the user interface. A central data base facility downloads coupon data to, and uploads transaction and coupon-related data from, the electronic coupon

dispensing machine via a first communication link between the central data base and the electronic coupon dispensing machine.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figures 1 and 2, an electronic coupon dispensing system according to a preferred embodiment of the present invention is shown generally at 5 10. The system 10 controls the operation of an associated electronic coupon dispensing machine (ECDM) 12. The coupon dispensing system 10 finds particular utility in grocery stores, as the features of the system 10 allow grocery stores to attain quick product turns for fresh juices, packaged meats and other items having limited shelf life. The coupon dispensing system 10 also provides stores with control over coupon distribution for particular items by reducing the time required to add, delete or temporarily suspend coupons for particular items. It should be appreciated that the term "stores" used throughout refers to retail outlets such as grocery stores, wholesale outlets, or any other entity or facility at which consumers purchase goods and services. It should also be appreciated that the term "manufacturers" used throughout 15 refers to distributors, suppliers, wholesalers or any producers or providers of the goods or services marketed and sold through the above stores.

Still referring to Figures 1 and 2, the electronic coupon dispensing system 10 includes a central data base facility 14 for controlling the coupon dispensing system. 20 The ECDM communicates with the central data base facility via a communication link 16. In addition to the central data base, the system also includes a conventional store POS system 18 connected to the ECDM via a communication link 19. The store POS system 18 includes a store central office processor 21 of the type typically interconnecting a particular chain of stores. The store central office processor 21 is connected to the central data base facility 14 via a communication link 22. The 25 system 10 also includes a remote manufacturer coupon redemption data base facility 20 which communicates with the central data base 14 via a communication link 23. Each of the aforementioned components of the coupon dispensing system of the present invention will be described in detail below.

Referring again to Figures 1 and 2, the ECDM 12 includes a housing 24 30 including a headboard 26 having conventional scrolling LED billboards 28 for coupon promotional purposes. The housing 24 also includes a display panel 30, such as a

- 6 -

translite display panel, for displaying products or manufacturer categories having coupons available from the ECDM. Alternatively, the display panel could include monitors for displaying pre-recorded advertisements or infomercials. The ECDM also includes one or more coupon selection menus, such as a touch screen 32 preferably of the type commercially available from Elosystems, Inc., permitting one or more consumers 34 to concurrently select from the data base of electronically stored coupons stored in an ECDM control device 36. The ECDM 12 also includes one or more printers 38 preferably of the type newly developed from Axiohm, Inc. or Practical Automation, Inc. for printing the coupons selected by the consumer 34 from the touch screen 32. A coupon dispense slot 40 is located adjacent each touch screen 32 for dispensing printed consumer-selected coupons.

The ECDM also includes a local coupon suspend mechanism, implemented through a keyboard 42 or through a touch screen 32, for permitting store management to temporarily suspend distribution of a coupon or coupons electronically stored in the ECDM control device 36 in response to sell out conditions to minimize the necessity of distributing rainchecks for sold out products during a coupon promotion. Preferably, the coupon suspend mechanism 42 or 32 is the only input for store management. Thus, all ECDM changes are made from the central data base 14. As a result, the system of the present invention requires minimal on-site maintenance.

The ECDM control device 36 is preferably a conventional personal computer of the type well known in the art, including a processor 43, such as the Intel Pentium® processor and conventional random access memory (RAM), read only memory (ROM) or any other conventional computer memory, as shown generally at 44. The control device also includes associated sensors 46 for generating coupon-related data such as coupon print data and menu selection data. The sensors transmit this generated data to the control device memory 44 for storage and later downloading to the central data base, as will be described below. The ECDM is programmed through well-known software programming techniques performed at the central data base facility and downloaded to the control device 36. It is contemplated that a plurality of ECDMs will be implemented and in communication with a single central data base facility, with each ECDM being controlled separately or on a chainwide basis.

Referring to FIG. 2, the central data base facility 14 is remotely located from the ECDM 12. The central data base facility 14 is maintained by Electronic Consumer Coupons, Inc., assignee of the present invention, or by an authorized licensee or representative. As described above, ECDM changes and available coupon selections are implemented at the central data base facility and downloaded to the ECDM via the communication link 16. Preferably, the communication link 16 is a conventional high data rate telephone line connection using two modems. However, this link may also be a wireless data link or any other conventional analog or digital link, such as a conventional network scheme, or a satellite or internet connection, capable of transmitting data between system components. Coupons may be electronically added, deleted or changed in the ECDM control device 36 by the central data base facility 14 through conventional software programming techniques in response to sale of new coupon space to or changes in existing coupon space by manufacturers. The central data base facility 14 also receives coupon-related data from the ECDM 12 either continuously or in batch mode, as will be described in detail below.

The central data base facility 14 also communicates with one or more manufacturer data bases 20 and one or more store central office processors 21 via the communication links 22, 23 which are of the type similar to the communication link 16. The central data base 14 downloads coupon redemption data and other product data to the manufacturer data base 20 from the ECDM 12 either on line or on a batch mode basis. Similarly, the store central processor 21, which is preferably a conventional mainframe computer interconnecting a chain of stores and having a file memory 48, downloads coupon-related data to the ECDM 12 or the central data base 14 or the store POS controller 52 described below downloads coupon-related data to the ECDM 12 depending upon predetermined manufacturer/store download parameters. Such data is useful for marketing purposes and for minimizing coupon redemption costs.

Still referring to FIG. 2, the POS system 18 includes one or more conventional POS terminals 50 each including a data reader 51, which is preferably a bar code reader. The POS system 18 also includes a local POS controller 52 having an associated memory 54 for storing POS data, including coupon redemption data, read by the data reader 51 until the data is downloaded to the memory 48 or the



- 8 -

ECDM 12. The store central office processor memory 48 receives and stores downloaded POS data from the POS memory 54 as described below. An advantage of the present invention is that the software associated with the POS system 18 need only be minimally altered to facilitate communication with the ECDM 12 through communication link 19, which is of the type similar to communication link 16. Thus, the coupon dispensing system of the present invention is essentially a stand alone system that does not interfere with presently implemented coupon systems and that requires only periodic downloading of coupon redemption data from the store central office processor memory 48 to the central data base facility 14, or from the POS controller 52 to the ECDM 12 to the central data base facility 14, where communication link 22 is of the type similar to communication link 16.

Referring to FIGS. 3A-3E, screens appearing to the consumer on touch screen 32 are shown. As shown at 60 in FIG. 3A, an introductory screen invites store shoppers to utilize the coupon dispensing system 10 by touching the touch screen 32. As shown at 62 in FIG. 3B, a select language screen may appear allowing the consumer to select a particular language for the coupon selection process. As shown at 64 in FIG. 3C, once a language is selected, the next successive screen introduces product categories. The screen 66 in FIG. 3D displays products from the categories in FIG. 3C having associated coupons available to the consumer. The screen 68 in FIG. 3E appears after the consumer selects one of the products in FIG. 3D, offering the user specific coupons for the products selected. If a screen selection is not made by the consumer at the screens shown in Figures 3A-3E within a predetermined amount of time, the system defaults to the introductory screen.

If a coupon is selected, the printer 38 prints the coupon, such as the coupon shown at 70 in FIG. 4, and dispenses the coupon through the coupon dispense slot 40 at the ECDM 12. Each of the screens shown in FIGS. 3B-3E includes a Return to Previous Display selection, allowing the consumer to scroll forward or backward through the screen selections. Additional subcategories or screen variations may also be added to the touch screen menu without departing from the scope of the invention.

Referring to FIG. 4, the coupon generated by and dispensed from the ECDM is shown at 70. The coupon 70 is preferably valid only on the day of the printing, as is indicated generally at 72 on the coupon 70. However, the length of coupon validity may vary according to predetermined parameters. The coupon may

incorporate both store identification data at 74 and a universal product code (UPC) 75 conforming with guidelines set by the Uniform Code Council Inc. (UCC). Alternatively, the data shown at 74 may include manufacturer offer codes. The guidelines for manufacturer coupon UPC codes are set forth in the publicly available  
5 UPC Coupon Code Guidelines Manual. Specifically, the manufacturer coupon code is typically a subset of the international 12-digit code having a single digit "5" prefix as set forth by the International Numbering Association (EAN) in Brussels, Belgium.

The coupon 70 is identified by the POS system 18 as being from the system 10 by a "55" or "65" prefix, or some other unassigned prefix, rather than the conventional "5" manufacturer coupon prefix. The POS system software is modified to recognize the "55" or "65" and perform three routines. First, it strips the leading "5" or "6" from the two digit prefix, thereby reducing the code to the standard 12 digit sequence with a "5" prefix. Second, the POS system 18 creates a file in the POS store central office processor memory 48 specifically for redeemed coupons  
15 dispensed from the ECDM 12. Third, the POS system processes and redeems the coupon as with conventional coupons. Thus, upon receiving the requisite command from either the ECDM 12 or the store central office computer, the coupon redemption data stored in the POS memory is uploaded thereto. As shown at 76, store advertising indicia is also printed on the coupon. Product logos and graphics  
20 identifying the product are printed as shown at 78.

While the above described UPC coding scheme is preferred, it should also be appreciated that a "99" in store distributed coupon two-digit prefix conforming with the UPC Coupon Code Guidelines Manual may also be utilized, depending upon the particular application. It is also contemplated that the UPC code 75 may be modified  
25 to comply with EAN 128 parameters or other like code modifications if and when such parameters are adopted and implemented in the future.

Turning now to system operation, FIG. 5 illustrates the methodology of the coupon select mode in the present invention generally at 90. At step 92, the system displays the introductory screen 60 of FIG. 3A until a consumer initiates the coupon  
30 selection process by touching the touch screen 32. At step 94, the system continuously queries whether the coupon dispense program is initiated through the touch screen 32. At step 96, if the consumer does initiate the system, the display language screen 62 of Figure 3B is displayed on the touch screen. At step 98, the

system queries whether a particular language has been selected. If a particular language has not been selected after a predetermined amount of time, the system defaults to the introductory screen. At step 100, if a particular language is selected, the product category screen 64 of Figure 3C is displayed.

5           At step 102, the system determines whether the Return to Previous Display selection has been chosen. If so, the system returns to step 96 to the language selection screen. However, if the selection is not chosen, the system advances to step 104 and determines if a product category is selected within a predetermined amount of time. If a product category is not selected after a predetermined amount of time,  
10           the system returns to the introductory screen. However, if a product category is selected within the predetermined amount of time, the methodology advances to step 106, and the various products having available coupons are displayed on screen 66 of Figure 3D. At step 108, the system determines whether the consumer has chosen the Return to Previous Display selection. If the Return to Previous Display selection  
15           is made, the system returns to the product category screen. If the Return to Previous Display selection is not made, the system advances to step 110 and displays the particular coupons available as shown on screen 68 of Figure 3E. At step 112, the system determines whether a coupon has been selected. If no coupon is selected after a predetermined amount of time and the Return to Previous Display selection is not  
20           made, the system returns to the introductory screen. If the Return to Previous Display selection is made, the system returns to the product display screen. If a particular coupon is selected, the coupon is printed at step 114 and the methodology ends. The methodology may be again initiated from the beginning at step 92 after a coupon is printed.

25           Referring to FIG. 6, the system methodology implemented in the present invention for temporarily suspending dispensing of a particular coupon by store personnel is shown generally at 120. At step 122, the system queries the status of the coupon suspend mode. At step 124, the system determines an entry has been at the coupon suspend mechanism 42 or via the touch screen 32. If no entry has been  
30           made, the system returns to step 122. However, if an entry has been made by store management, the ECDM enters a coupon suspend mode at step 126. At step 128, the ECDM receives coupon suspend data through the coupon suspend mechanism 42 or the touch screen 32. This coupon suspend data is subsequently entered into the

- 11 -

ECDM control device 36, and the dispensing of the particular coupon is suspended at step 130. At step 132, the system determines if additional coupons are to be suspended. If no additional coupon information is entered the coupon suspend mechanism 42 or the touch screen 32, the method ends. However, if additional information is entered, the methodology returns to step 128. The same methodology is followed to reactivate a suspended coupon. It should be appreciated that entry into the coupon suspend mode is limited to store management or other authorized personnel having preapproved access to the ECDM control device. By restricting access to the ECDM control device, system integrity and security is maintained.

Referring to FIG. 7, system methodology for uploading POS and ECDM data from the ECDM 12 and POS system 18 or store central office processor to the central data base 14 is indicated generally at 140. At step 142, the ECDM queries the system status. At step 144, the ECDM determines whether to download coupon redemption data from the POS system. At step 146, if the predetermined time has been reached for downloading coupon redemption data, the ECDM downloads the data from the POS system. If the download period has not been reached, the system continuously queries system status at step 142 until the particular time is reached. At step 146, after the coupon redemption data is downloaded, the ECDM stores coupon-related data, including coupon redemption data, screen selection data and coupon print data, at the ECDM control device 36. At step 150, the ECDM receives a command from the central data base. At step 152, the ECDM determines whether the command is a download command or an upload command. If the command is a download command, the ECDM receives additional coupon add, delete or suspend data from the central data base and adds this data to the control device 36. At step 156, if the command is not a download command, the ECDM determines that the command is an upload command. Subsequently, the ECDM transfers the ECDM and POS coupon related data to the central data base for processing. Also, at this point, the store central office processor transfers coupon redemption data to the control data base.

Once the central data base 14 receives the coupon redemption data and other coupon-related data from the ECDM and/or the store central office processor 21, the central data base 14 transmits certain of the data, according to a predetermined agreement with the manufacturer or store chain, to the manufacturer data base facility

- 12 -

20 or to the store central office processor 21. This data gives the manufacturer, or store, product purchase history for a particular product or products, and enables the manufacturer, or store, to more effectively target and promote its products. In addition, POS coupon redemption data enables the manufacturer, or store, to accurately determine reimbursement parameters for particular stores or store chains, thereby eliminating the lengthy and cumbersome process of manually collecting paper coupons, and sending these coupons through conventional accounting facilities and clearing houses in order to reimburse the store. By electronically transmitting coupon redemption data to the manufacturer or store, overall cost of coupon redemption is reduced for both the store and the manufacturer.

In view of the foregoing description, it should be appreciated that the coupon dispensing system of the present invention enables store management and product manufacturers to more effectively target in-store consumers. The coupon dispensing system of the present invention exhibits a great deal of flexibility in that coupons may be added, deleted or suspended from the dispensing system within minutes, thereby eliminating the months of lag time between printing and distributing of conventional paper coupons. The coupon dispensing system of the present invention requires minimal interfacing with existing store POS systems and, except for individual coupon suspensions, is controlled wholly at a central data base facility. The coupon dispensing system of the present invention further eliminates the float associated with present day coupon redemption procedures, thereby enabling both stores and product manufacturers to benefit from faster distribution and redemption of coupons.

While the above detailed description describes the preferred embodiment of the present invention, the invention is susceptible to modification, variation and alteration without deviating from the scope and fair meaning of the subjoined claims.

WHAT IS CLAIMED IS:

1. A coupon dispensing system, comprising:  
a point of sale system including a terminal having a data reader for reading coupon redemption data, and a point of sale system memory for storing said read coupon redemption data;  
5 an electronic coupon dispenser including a memory for electronically storing a plurality of coupons, a user interface for permitting selection from said plurality of coupons from a coupon menu, and a printer for printing coupons selected at said user interface;  
said electronic coupon dispenser including sensors for generating  
10 coupon-related data based on selections made at said user interface and coupons printed by said printer;  
a central data base facility operatively connected to said point of sale system for downloading said coupon redemption data and to said electronic coupon dispenser for downloading said coupon-related data;  
15 said central data base facility communicating with said electronic coupon dispenser in response to first predetermined parameters and with said point of sale system in response to second predetermined parameters.
2. The system of Claim 1, wherein said electronic coupon dispenser captures said coupon-related data and stores said coupon-related data in said electronic coupon dispenser memory.
3. The system of Claim 2, wherein said coupon-related data comprises menu selection data, including category selection data, product selection data and coupon dispense data.
4. The system of Claim 1, wherein said central data base selectively downloads said coupon-related data to said point of sale system.
5. The system of Claim 1, wherein said central data base selectively downloads said coupon redemption data to said point of sale system.

- 14 -

6. The system of Claim 1, further comprising coupon dispensing system identification means printed on said coupon for identifying a coupon dispensed from said electronic coupon dispenser.

7. The system of Claim 6, wherein said coupon dispensing system identification means comprises a bar code prefix.

8. The system of Claim 7, wherein said bar code prefix comprises a two digit numerical prefix.

9. The system of Claim 1, further comprising at least one manufacturer data base in communication with said central data base for downloading said coupon-related data from said central data base.

10. The system of Claim 9, wherein said manufacturer data base downloads said coupon-related data from said central data base in batch mode.

11. The system of Claim 1, further comprising at least one manufacturer data base in communication with said central data base for downloading said coupon redemption data from said central data base.

12. The system of Claim 11, wherein said manufacturer data base downloads said coupon redemption data from said central data base in batch mode.

13. The system of Claim 1, further comprising a local electronic coupon dispenser control for selectively temporarily suspending certain of said plurality of electronic coupons.

14. The system of Claim 1, wherein said coupon data comprises new coupons, modifications to said plurality of stored coupons, and cancellations of said plurality of stored coupons.

- 15 -

15. A coupon dispensing system, comprising:

a point of sale system including a terminal having a data reader for reading coupon-related data, and a point of sale system memory for storing said read coupon-related data;

5 a coupon dispensing machine, comprising:

a memory for electronically storing a plurality of coupons;

a user interface including a coupon menu for permitting selection from said plurality of stored coupons;

a printer for printing coupons selected from said coupon menu;

10 and

a central data base facility for permitting updating of said plurality of coupons;

said central data base facility communicating with said coupon dispensing machine in response to first predetermined parameters and with said point of sale system in response to second predetermined parameters.

15

16. A method of dispensing coupons, comprising:

electronically storing a plurality of coupons at a coupon dispensing apparatus;

5 displaying a menu of said plurality of electronically stored coupons at said coupon dispensing apparatus;

sensing selection of a coupon from said plurality of electronically stored coupons at said coupon dispensing apparatus;

printing said selected coupon at said coupon dispensing apparatus;

10 sensing redemption of said selected coupon at a coupon redemption apparatus; and

downloading data from said coupon redemption apparatus generated, in response to said step of sensing redemption of said selected coupon, directly to a central data base facility in response to first predetermined parameters or to said central data base facility through said coupon dispensing apparatus in response to second predetermined parameters.

15



- 16 -

17. The method of Claim 16, further comprising the step of downloading said data generated in response to said step of sensing redemption of said selected coupon to a remote data base facility.

18. The method of Claim 16, further comprising the step of periodically updating said plurality of electronically stored coupons.

19. The method of Claim 18, wherein said step of periodically updating said plurality of electronically stored coupons comprises adding new coupons, cancelling existing coupons, and suspending existing coupons.

20. The method of Claim 16, further comprising the step of suspending one or more of said plurality of electronically stored coupons via coupon suspension means located at said coupon dispensing apparatus.

1/6

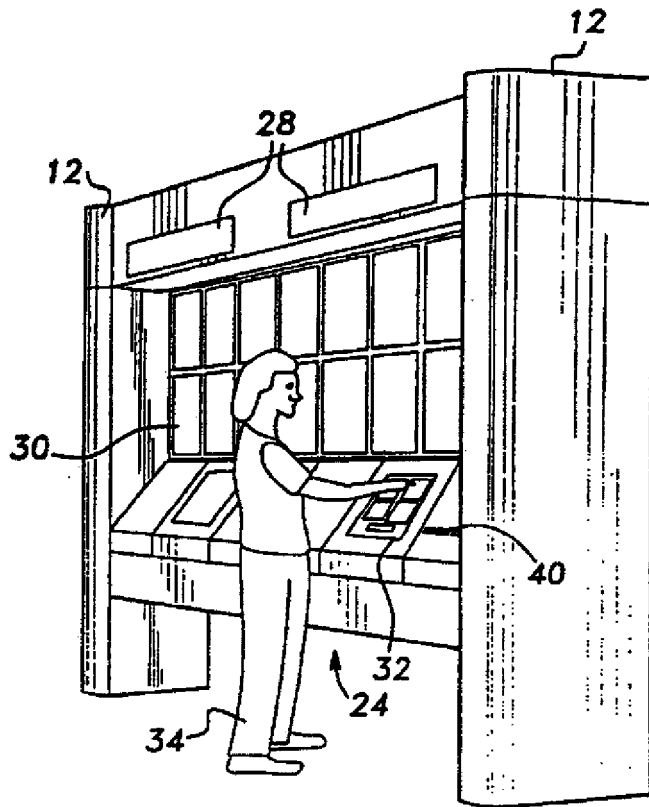


Fig-1

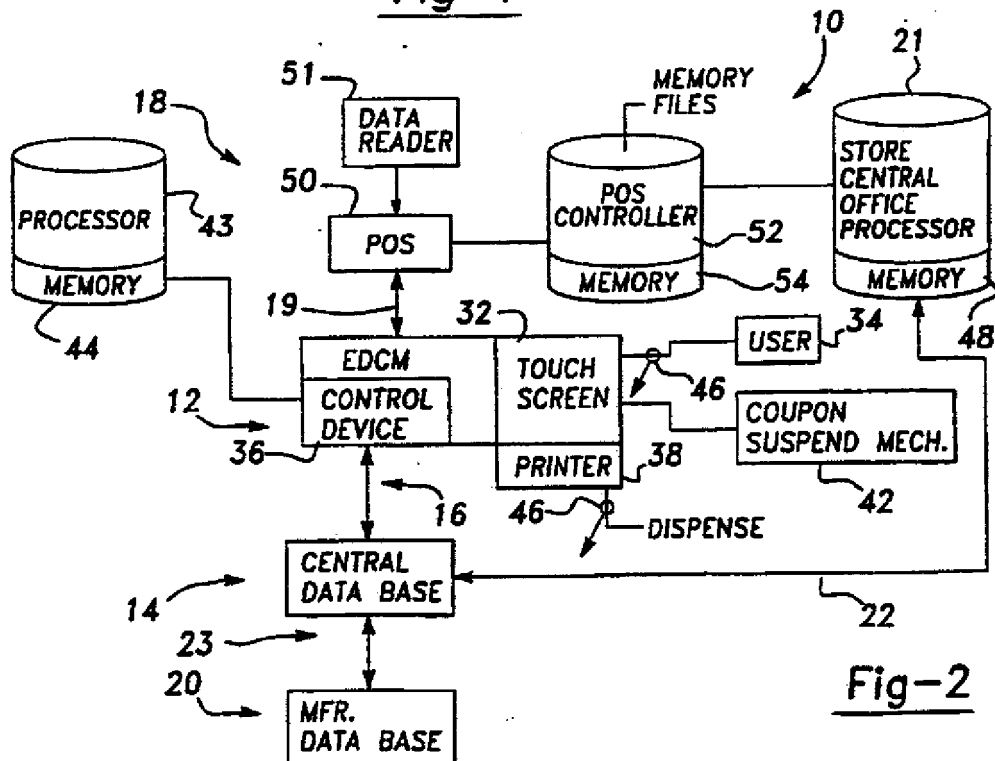
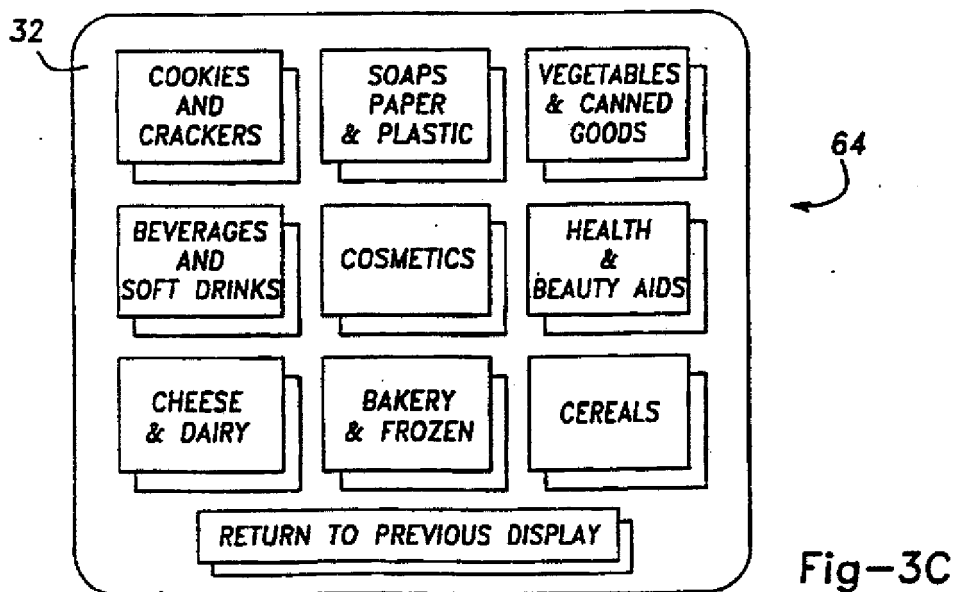
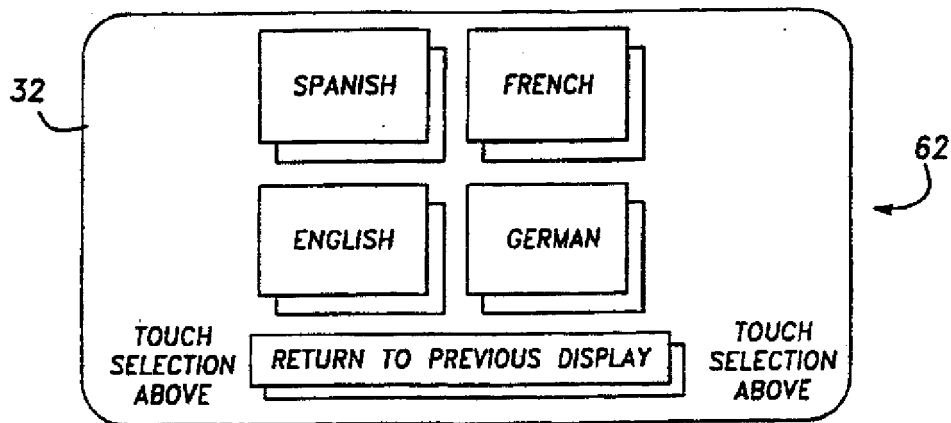
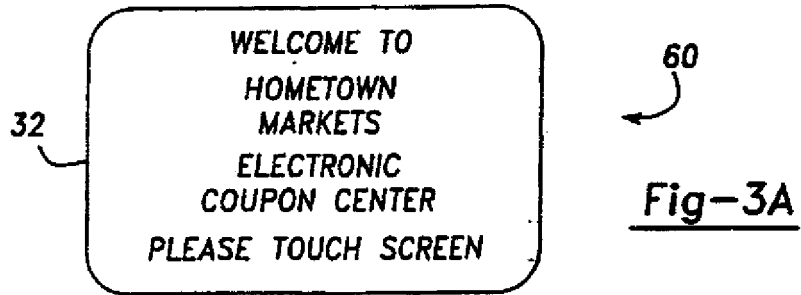
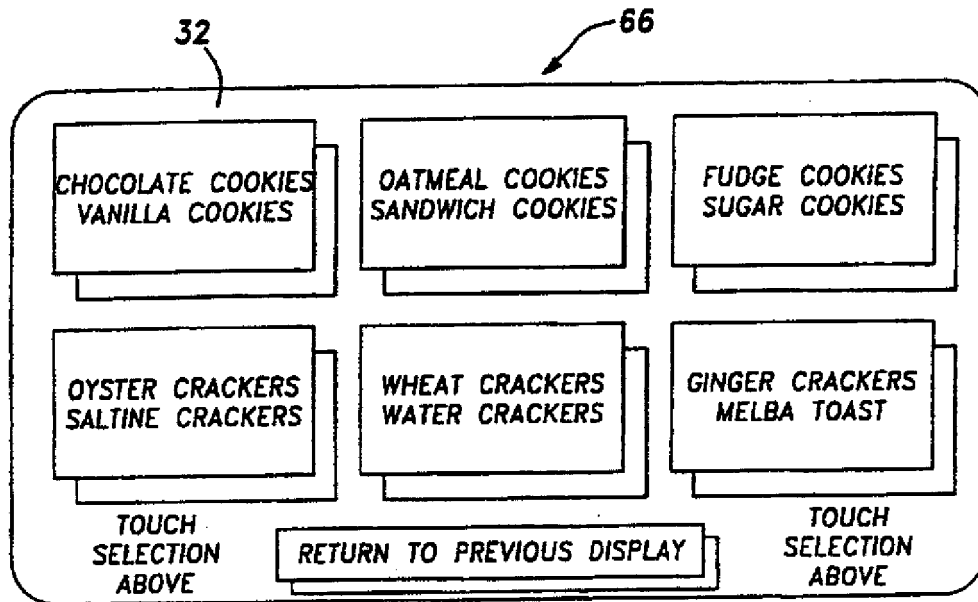
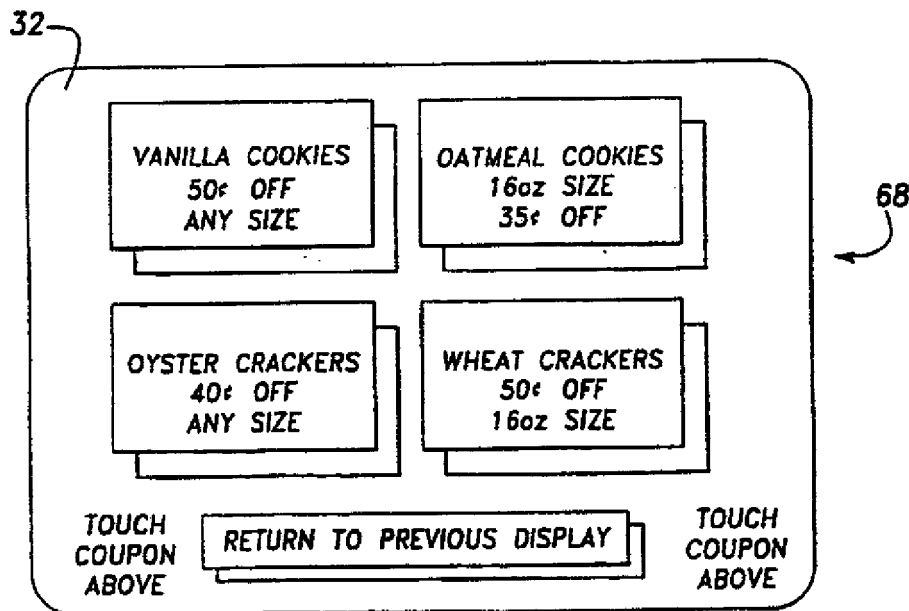
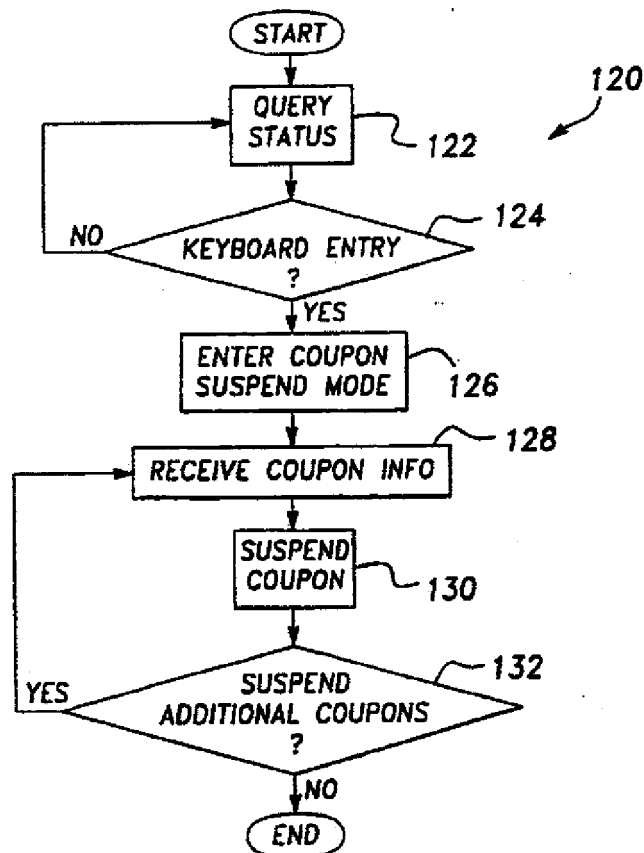
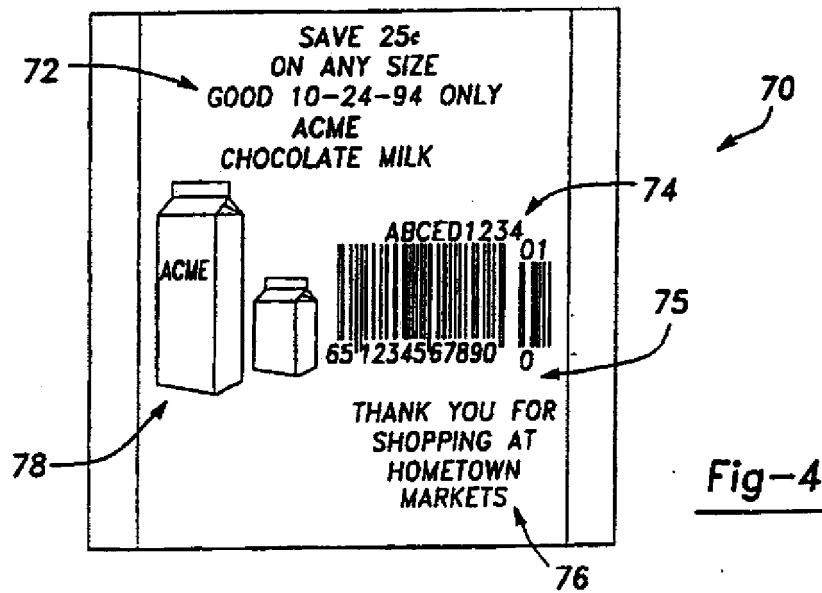


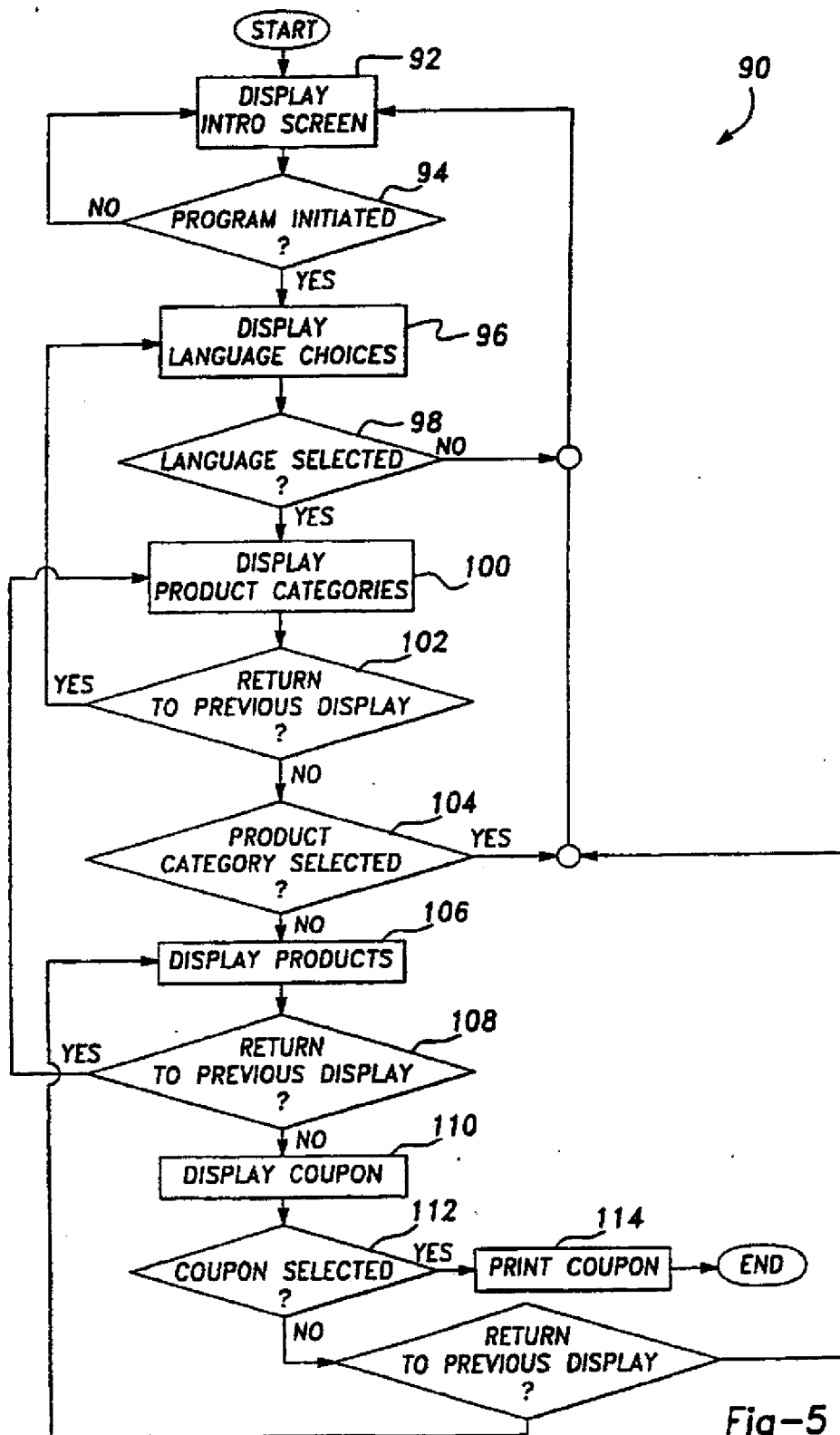
Fig-2

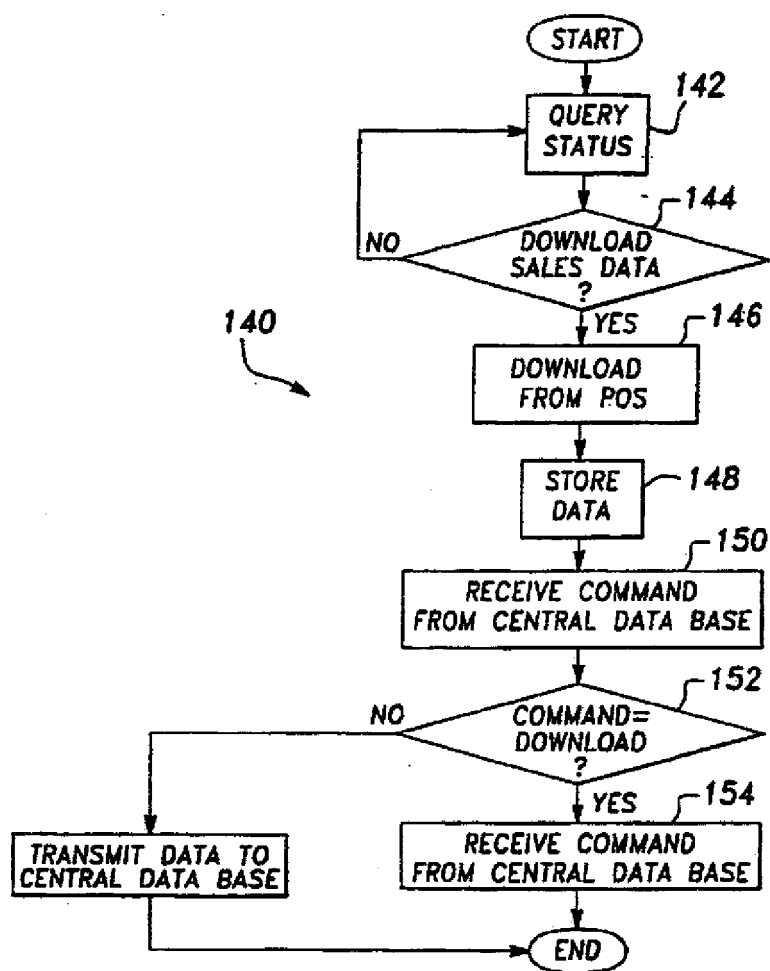


Fig-3DFig-3E

Fig-6

5/6

Fig-5

Fig-7

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/11129

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G07F 7/00, 7/08

US CL : 364/479.05; 395/214; 235/383

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 364/479.01, 479.02, 479.04, 479.05, 479.06, 479.07; 395/214, 216, 221, 222; 235/375, 379, 380, 381, 383, 384, 385

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,176,224 A (SPECTOR) 05 January 1993, the abstract, Figs. 2-4, and column 5 line 39 to column 8 line 10.	1-12 and 14-19
Y		13 and 20
Y	US 5,305,197 A (AXLER et al.) 19 April 1994, column 1 lines 46-49.	13 and 20
A	US 4,674,041 A (LEMON et al.) 16 June 1987, the entire document.	1-20
A	US 4,882,675 A (NIGHTBERGER et al.) 21 November 1989, the entire document.	1-20
A	US 4,949,256 A (HUMBLE) 14 August 1990, the entire document.	1-20

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be part of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

11 AUGUST 1997

Date of mailing of the international search report

02 OCT 1997

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ERIC W. STAMBER

Telephone No. (703) 305-3800



## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/11129

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,185,695 A (PRUCHNICKI) 09 February 1993, the entire document.	1-20
A	US 5,353,218 A (DE LAPA et al.) 04 October 1994, the entire document.	1-20
A	US 5,502,636 A (CLARKE) 26 March 1996, the entire document.	1-20
A,P	US 5,557,721 A (FITE et al.) 17 September 1996, the entire document.	1-20
A,P	US 5,581,064 A (RILEY et al.) 03 December 1996, the entire document.	1-20